The international magazine for the tube and pipe industries

TUBE & PIPE TECHNOLOGY

May 2012 | Vol 25 No 3 | US$33

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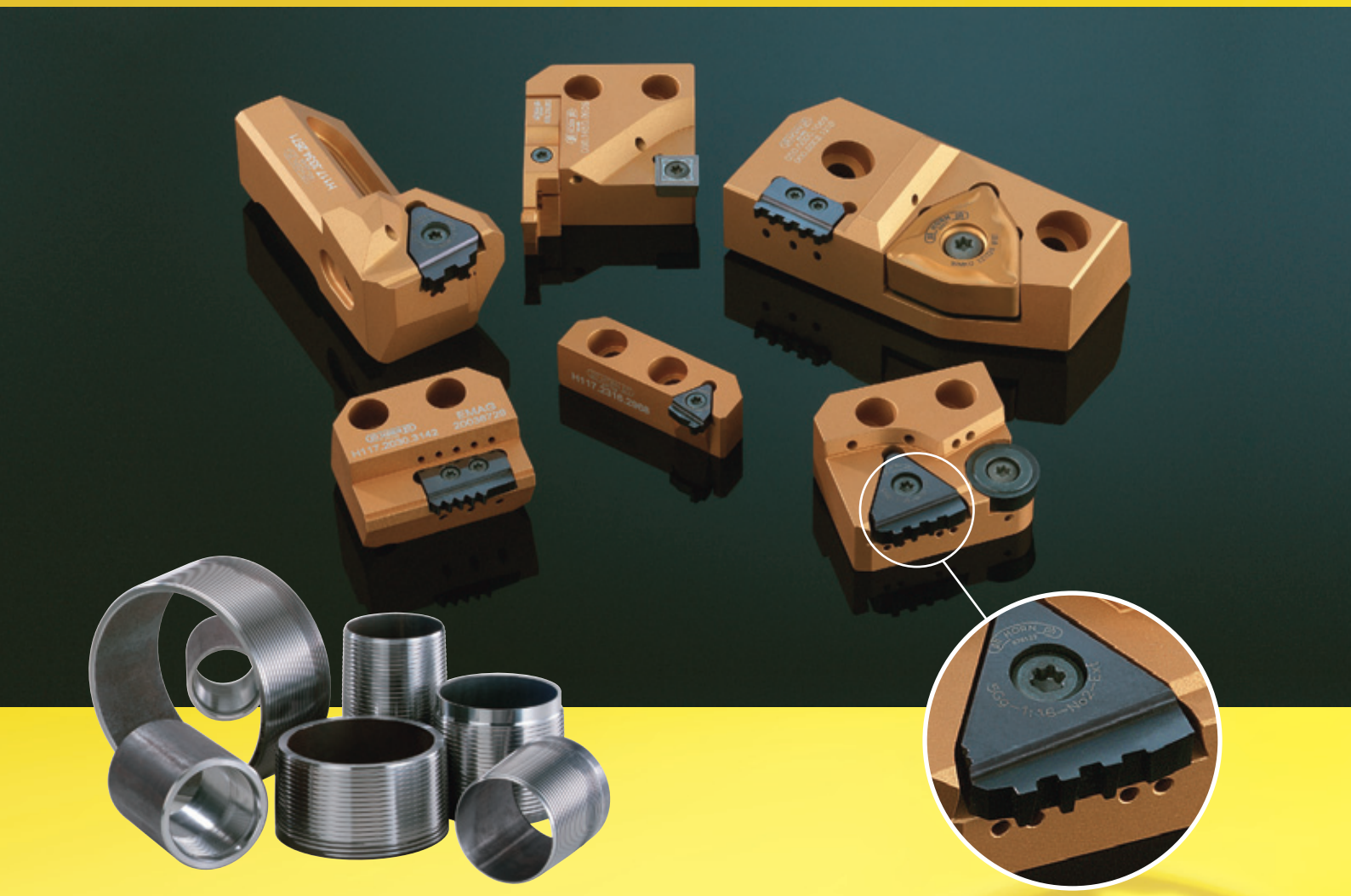

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Straightening

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TIANBAO,CHINA 2004 - API/ERW 8"-25"Ø

ORRCON,AUSTRALIA 2006 - API/ERW 8"-20"Ø

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GIPI,OMAN 2010 - API/ERW 8"-24"Ø

BHUSHAN STEEL,INDIA 2011 - API/ERW 8"-25"Ø

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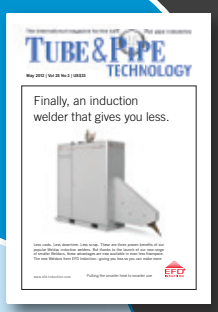
The May Issue

Welcome to the latest Tube & Pipe Technology magazine. This issue we have features on the important areas of cutting, sawing and profiling technology as well as inspection, testing and quality control and a look at the forthcoming Tube Russia 2012 in Moscow. We also have an in-depth technical article from one of the leading tube technology companies in China – FD Machinery – written by chief engineer Guowu Goa about recent developments in the use of AUTO-DNSA mills and ERW tube mills.

Our entire team have just returned from an extremely busy and successful Tube Düsseldorf show and by all accounts it was the most enjoyable that many of us have been to for some time. There was an extremely positive atmosphere at the event, which I imagine was helped by the unusually hot weather this year, but I hope the sense of optimism goes a little deeper too in terms of an improving world economy. I spoke to leading companies from countries around the globe and the vast majority reported a very healthy increase in serious enquiries when compared to the same time two years ago when there was a lot more caution in the air.

Next issue we have articles on the Tube China 2012 show, tube scarfing systems and tools and the latest developments in tube welding technology, so please feel free to submit any relevant material you may have.

Rory McBride – Editor



Front Cover Story

The roots of EFD Induction go back to the launch in 1950 of a universal induction hardening machine by the German company Induktionserwärmung Fritz Düsseldorf GmbH (FDF). While FDF was expanding in the 1970s, an induction revolution was taking place in Norway, where engineers had figured out how to transistorise frequency converters for induction heating.

In 1981 three of those engineers founded ELVA Induksjon. In 1983 they unveiled the Minac range of mobile converters. Workpieces no longer had to be brought at great cost to a stationary induction heater – the heater could now go to the piece. In 1991 the managing directors of FDF and ELVA met by chance. They talked… and speculated. FDF was strong in stationary induction hardening machines. ELVA was the agile innovator with a track record in finding new applications for induction heating. What if the two companies got together? In January 1996 FDF and ELVA merged to create EFD Induction. And the rest is, as they say, history.

Today, EFD Induction is Europe's largest supplier of induction solutions for industry (number two worldwide, but they aim to change that!). If you'd like to know more about them, their products, and how they can help boost your productivity, just get in touch.

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Tube Russia 2012

Economic conditions for the trade fairs Tube Russia, Metallurgy-Litmash, and Aluminium/Non-Ferrous, to be held from 28 to 31 May 2012 in Moscow, are improving. Despite an extremely difficult economic environment over the past few years, the industry is now looking to the future with a fair amount of optimism thanks to the constantly improving investment climate in Russia.

Cutting, sawing & profiling technology

Today, an average-size or even a small tube and pipe plant is likely to command impressive cutting capacity, with a single highly flexible machine able to cut a variety of profiles either at the end of the tube or along its length. Employing one tool in a single cycle to cut round, square, rectangular, flat, oval, and virtually any other form, the unit will outperform cutters that only recently were state-of-the-art.

Inspection, testing & quality control

Producers of tubes face strict government and industry regulations that hold them liable for lapses in quality. Tube makers to the automotive industry must provide product that holds tight tolerances. Plastic tube manufacturers, even as they meet challenges as diverse as the markets and customers they serve and are under a concomitant obligation to substantiate their claims.

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The development of AUTO-DNSA mills and ERW tube mills

By Guowu Gao, chief engineer, FD Machinery, China

Zhejiang Kingland orders energy-efficient spiral pipe welding line

ZHEJIANG Kingland Pipe Industry, province of Zhejiang, China, awarded PWS, an SMS Meer company, both Germany, a contract for the supply of off-line spiral pipe welding equipment.

PWS will supply an integrated system solution, consisting of a spiral pipe forming and tack-welding machine for forming and initial welding of the hot-rolled steel strip, and the three downstream off-line finish-welding stands. The new installation is to be commissioned in the second quarter of 2013.

Zhejiang Kingland will have the option of adding a fourth finish-welding stand at a later stage. This would increase annual capacity from above 180,000 tons to some 240,000 tons. Michael Stark, CEO of PWS, said: "Installation of an additional finish-welding stand was included in our engineering planning from the start, as it would permit a significant increase in production capacity, with no interruption to ongoing operation."

Another highlight is the energy-efficient high-productivity welding technology available from PWS. Energy savings are claimed to be more than 30 per cent compared to older welding methods. In the new PWS technology, the welding-current sources operate without transformers, while process control is accomplished by means of a modern power electronics module. The welding machines thus attain an efficiency of over 90 per cent, and welding speed can be significantly raised with no loss of process stability.

Zhejiang Kingland will be able to produce pipes with outer diameters from 508 to 1,626mm (20" to 64") and wall thicknesses ranging from 6.35 to 25.4mm (¼" to 1") on its new off-line spiral pipe welding machine. Pipe lengths range between 8 and 12.5m.

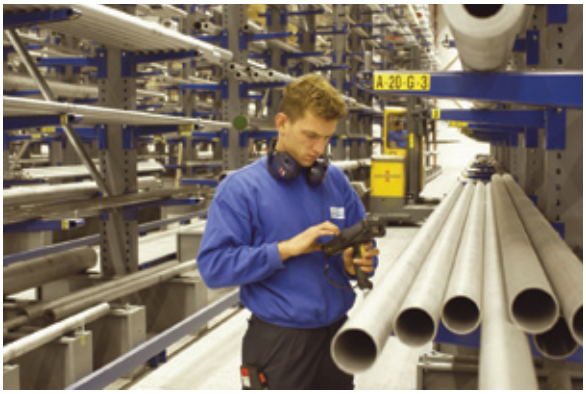
PWS GmbH – Germany
Website: www.pws-gmbh.info

Sandvik celebrates 150 year steel production anniversary

THIS year marks the 150th anniversary of steel production by Sandvik, and this was celebrated on the company's stand at Tube 2012 in Düsseldorf. A central feature of the stand was a model of the Vasa, a 17th Century Swedish maritime treasure and subject of an on-going research and development collaboration between the Vasa Museum and Sandvik. This collaboration is facilitating the essential replacement of 5,000 iron bolts with highly advanced stainless steel bolts in order to preserve the structural integrity of the vessel well into the future.

Sandvik offers materials technology solutions for demanding applications in some of the most arduous environments. Its research and development capability has resulted in the introduction of the latest hyper-duplex stainless steel for demanding sub-sea applications and zirconium tubing for the nuclear industry.

In heat exchanger applications, hyper-duplex tubes significantly outlast alternatives, not only proving cost effective throughout their life cycle, but also increasing operational plant uptime. It is claimed that by replacing carbon steel tubes with Sandvik SAF 2707 HD® tubes, the rate of corrosion is reduced to one tenth.



Stainless steel tube supply from Sandvik

A plant using heat exchangers with the Sandvik tubes would be capable of operating for ten years without maintenance shutdowns or tube replacements.

Designed to help reduce machining requirements in component manufacture as well as reduce overall component weight, Sandvik hollow bar products were also displayed at Tube 2012, including duplex material grades. The use of this material, especially in the Sanmac form, can increase component production capability as well as cut down on waste material. A converter tool is available, as an app for iPhone and iPad, that calculates the money saved when switching from bar to hollow bar.

Sandvik's powder metallurgy products are manufactured by the hot isostatic pressing process, which allows the production of complete geometrically intricate products that offer excellent resistance to corrosion and outstanding mechanical properties.

The company maintains a stock of popular tube material grades and sizes throughout its strategically located distribution and manufacturing centres worldwide, ensuring reliable and efficient product supply via its global distribution network.

Sandvik Materials Technology – Sweden
Fax: +46 26 25 17 10
Website: www.smt.sandvik.com/tube

Appointment of new executive secretary

THE International Tube Association – the world's largest and most influential personal membership association for the tube and pipe industries – has appointed Dipl.-Ing. Peter Byroslawsky as its new Executive Secretary.

Mr Byroslawsky has more than 40 years' experience in the tube and pipe industry and subsequently gained many years' experience in sales and marketing departments.

Prior to becoming a consultant in 2009, Mr Byroslawsky enjoyed a long career with Mannesmann Demag AG, latterly employed as general manager of the worldwide central marketing department for SMS Meer GmbH, Germany.

Mr Byroslawsky has experience in planning of national and international fair participation, including stand management, and public relations at a national and international level.

His broad experience has led him to undertake work in near, middle and far East, eastern European countries, Russia and, for example, during his work for several years in a Chinese joint venture.

Mr Byroslawsky has been a member of the ITA's European Management Board and the International Executive Management Board since 2004.

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Email: info@itatube.org


Peter Byroslawsky

Diary of Tube Events

2012

MAY

7-11	**IFAT Ensorga** *Munich, Germany* Exhibition	→	**Email**: info@ifat.de **Website**: www.ifat.de
28-31	**Tube Russia 2012** *Moscow, Russia* Exhibition	→	**Email**: ryfischd@messe-duesseldorf.de **Website**: www.metallurgy-tube-russia.com

JUNE

26-28	**ITA Tube Conference** *Nashville, USA* Exhibition	→	**Email**: info@itatube.org **Website**: www.itatube.org

SEPTEMBER

25-28	**Tube China 2012** *Shanghai, China* Exhibition	→	**Email**: tube@mdc.com.cn **Website**: www.mdc.com.cn

OCTOBER

23-27	**EuroBLECH** *Hanover, Germany* Exhibition	→	**Email**: info@euroblech.com **Website**: www.euroblech.com
30 Oct – 1 Nov	**Tube India** *Mumbai, India* Exhibition	→	**Email**: dughl@md-india.com **Website**: www.tube.india.com

NOVEMBER

12-14	**Fabtech / AWS Welding Show** *Las Vegas, USA* Exhibition	→	**Email**: information@fmafabtech.com **Website**: www.fabtechexpo.com
27-29	**Valve World Expo** *Düsseldorf, Germany* Exhibition	→	**Email**: infoservice@messe-duesseldorf.de **Website**: www.messe-duesseldorf.de

2013

JANUARY

7-10	**Tube Arabia** *Dubai, UAE* Exhibition	→	**Email**: infoservice@messe-duesseldorf.de **Website**: www.messe-duesseldorf.de

FEBRUARY

20-23	**Indometal** *Jakarta, Indonesia* Exhibition	→	**Email**: infoservice@messe-duesseldorf.de **Website**: www.messe-duesseldorf.de

MARCH

28-30	**BORU 2013 (Ihlas Fuar)** *Istanbul, Turkey* Exhibition	→	**Website**: www.borufuari.com

Major order for customised finishing line

REIKA GmbH & Co KG has secured a major contract from a Chinese company for a customised turnkey finishing line, including a 10-roll straightening machine and an expansive transport system. The line is designed for processing seamless stainless steel tubes up to 30m in length, and will be delivered by the end of 2012.

The optimised process will minimise manpower and set-up time while maximising throughput and up-time. This was achieved through a strong and highly evolved mechanical design interlinked and controlled by a sophisticated electronic supervisory system. A special transport system was designed for longitudinal and cross transport that incorporated various value added process steps, including marking and testing. Set-up times are significantly reduced by automatic, self-learning control.

The finishing line's state-of-the-art 10-roll straightening machine features a separating line and variable geometry inlet trough for protective and damage-free tube transport. "Customers were convinced by key features such as a robust, rigid and vibration-resistant steel frame construction, large roll diameter for long-life operation, individual drives to compensate roll wear and tear and user friendly CNC control," commented Reika managing director Hans-Jörg Braun.

Reika will supply a customised turnkey finishing line

The finishing line also features a grinding line for outside grinding of the tubes, a multi-testing block (ultrasonic and eddy current), flaw cut-out devices with reworking track, length measuring station, marking and sample cutting equipment, visual inspection, an inside and outside cleaning station, and a length sorting system for up to 12 different individual lengths with bundle storage system.

Reika's production range includes finishing lines for hot-rolled, drawn, cold-pilgered and longitudinal welded tubes, hot-rolled bars and precision blanks. Individual processing stages such as straightening, testing, cutting, chamfering, multiple storage and bundling are combined within the lines. All products are subject to all-inclusive service and support such as output improvement by optimising or design according to customers' specifications.

Reika GmbH & Co KG – Germany
Fax: +49 2331 96 90 96
Email: info@reika.de
Website: www.reika.de

Aveva opens new office in Genoa

AVEVA has opened a new office in Genoa, Italy, to support the growing Italian market. The office will provide sales and support for all Aveva products and solutions, as well as hosting training courses and customer events.

"Aveva's product portfolios, particularly our engineering and design solutions in the plant and marine markets, have seen a significant growth in demand across Italy over the last year," said Daniel Gennaro, country manager – Italy, Aveva.

"In order to expand our services and support capabilities we required a space that reflects our rapidly expanding market position and will enable us to realise our growth objectives."

"The new office enables us to host key customers and prospects due to its locality, as well as the ability to offer essential product and solution services, such as on-site training."

Fredy Ktourza, senior vice president, West EMEA added, "Genoa has a long tradition in the power, metal and shipbuilding industries and is an ideal location. It supports our drive to continue winning market share against our competitors and it will allow us to play a much greater role in the Italian market."

Aveva has over 120 customers in Italy, including major owner operators and EPCs in industries such as power, oil and gas, and shipbuilding.

Aveva – Italy
Fax: +39 010 863 11 86
Email: info.it@aveva.com
Website: www.aveva.com

www.sikora.net/laserseries6000

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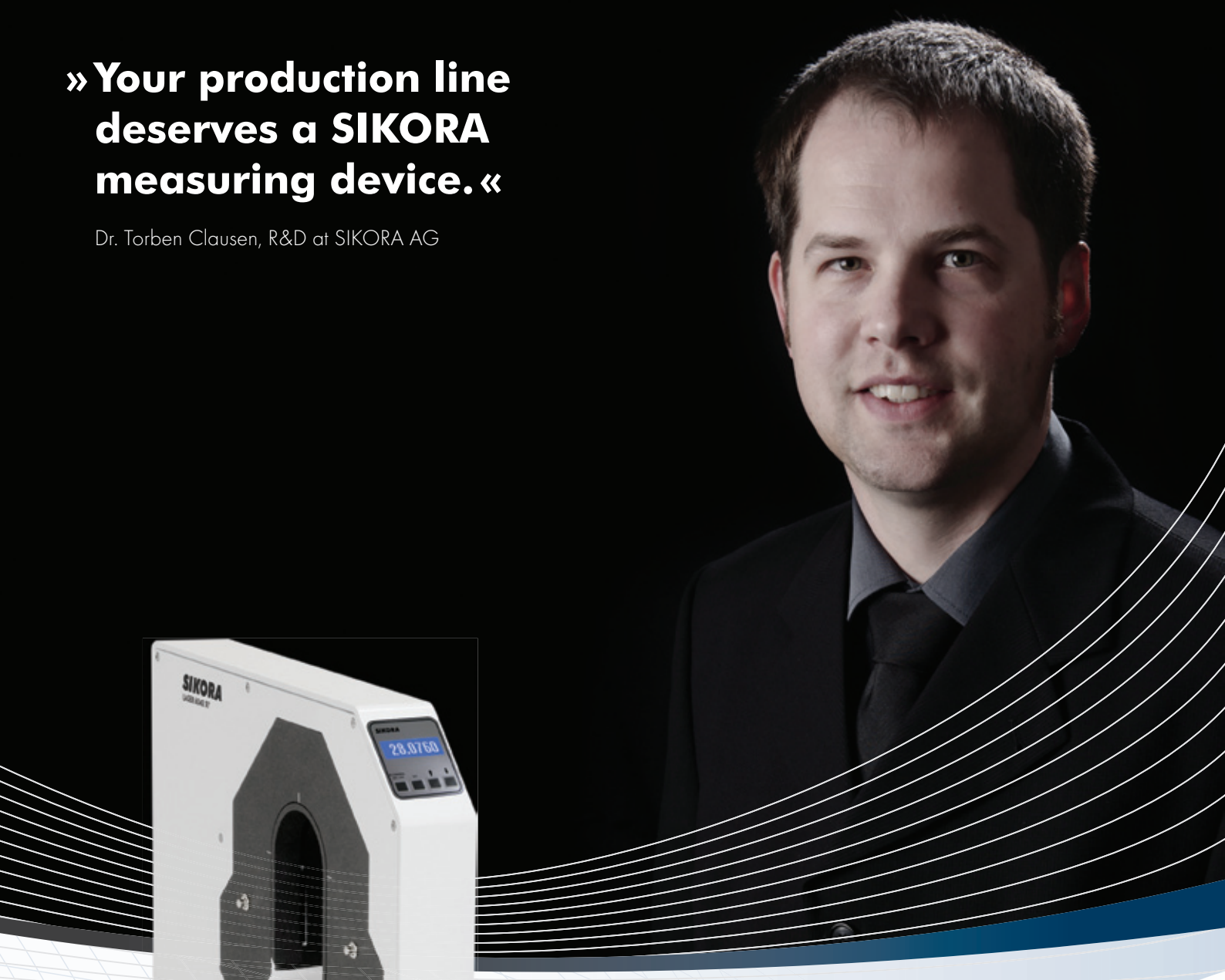
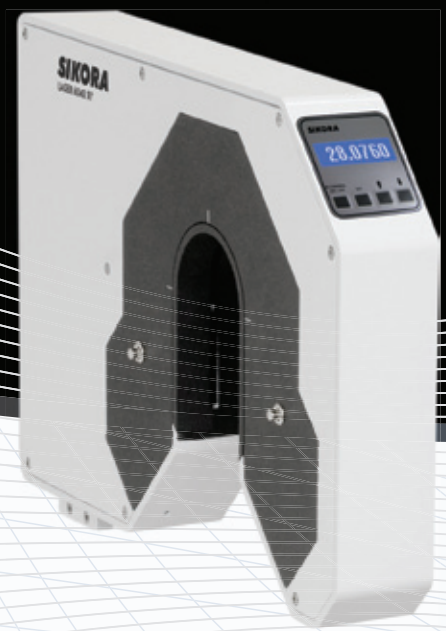
Dr. Torben Clausen, R&D at SIKORA AG

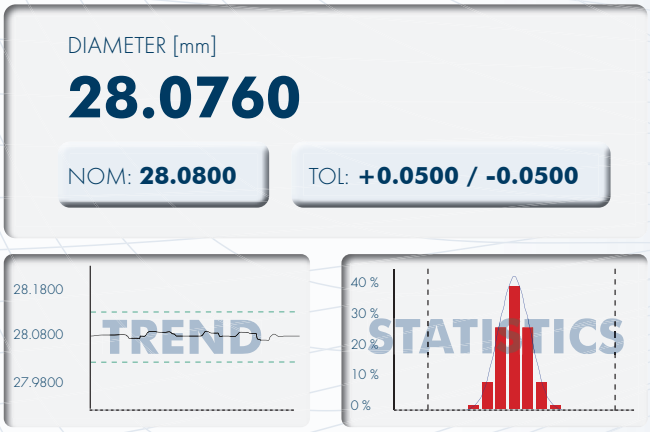




During the extrusion of hoses and tubes the LASER Series 6000 measures the outer diameter in a range from 0.2 to 78 mm.

The high measuring rate of the gauges allows at the same time a detection of lumps and neckdowns.

New: The gauge heads now have an integrated brilliant LCD display with control panel option. This allows the operator to read the diameter measuring value directly from the gauge head and to control the line.



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Combilift Triumphs at the FLTA Awards


Combilift scooped the award on the evening from Olympic champion Sally Gunnell

IT was a night to remember for Combilift at this year's FLTA Awards for Excellence, held in Birmingham, UK. Not only did the company win the Innovation Category for the second time, for its new Rough Terrain RT forklift, but its Combi-CB model also scooped the first and only "Victor Ludorum" prize, billed by the FLTA as the ultimate winner of winners in the awards' 18 year history.

To mark London 2012 the FLTA introduced an Olympic theme to the event, which was co-hosted by British Olympic champion Sally Gunnell. The Victor Ludorum was a special one-off award chosen from every winning entry in all previous awards in the Environment, Ergonomics, Safety and Innovation categories. The final votes were cast by attendees at the event, and as befits an accolade of this nature, the winner's trophy was in a class of its own. The Archimedes (or "Archie") statuettes awarded to winners are cast in bronze by internationally renowned sculptor Les Johnson. The gold plated Archie awarded to Combilift is unique and was created to mark the Association's 40th year. "This very special trophy will naturally have pride of place in our awards cabinet," said Combilift MD Martin McVicar.

Launched in 2011, the RT was originally designed in collaboration with Keyo Agricultural Services, one of the UK's largest providers to the poultry processing sector. Whereas forklifts previously used in this application have been modified versions of mainstream models, the Combi-RT is the first purpose built, no-compromise machine designed for the exacting demands of the industry and represents a significant step forward in the handling of live poultry.

The FLTA's verdict on the Combi-CB when it won the Innovation category in 2009 was that "the Combi-CB compact multi-directional counterbalance transfers the 4-way principle into a small counterbalance truck for the first time." This ground-breaking development, designed for operations handling a mix of both palletised and long loads, has since become one of Combilift's best selling models.

Sam Moffett of Combilift accepted both awards on behalf of the company. Martin McVicar comments: "Innovation and substantial investment in R&D have been our bywords since we established Combilift and we are delighted that this has once again been recognised. To have the Combi-CB acknowledged by our peers in the materials handling sector as having made 'the most outstanding contribution to the industry since the awards began' is the ultimate tribute. We extend our thanks to the FLTA and everyone who voted for us."

Combilift Ltd – Ireland
Email: info@combilift.com
Website: www.combilift.com

A successful show for PIPE

MARCH saw the 2012 Tube Exhibition in Düsseldorf, and another great show for PIPE Ltd.

Managing director Tony Tagliaferro said of the show: "We have always had a great response to our presence at the Tube show, and this year has exceeded our expectations once again. Tube Düsseldorf is a key show for us in the European market, to meet both with existing and potential new clients, distributors and suppliers alike to promote the release of our new products as we have done this year and at the previous (2010) show."

PIPE Ltd's stand, as always, featured live demonstrations of its pipe bevelling and cutting machines, pipe clamps, and pipe stands together with the latest innovations in purging equipment for exotic pipe welding applications the Rapid Purge (featured in the April issue of *Tube Products International*) and the double seal silicone system.

One of the products drawing the most attention at the PIPE stand was the brand new wet tungsten electrode grinder, the Pro Point Plus which gives the user the ability to cut and grind tungsten electrodes in the technically correct and safest way, collecting potentially harmful dust and off cuts in the liquid sump, allowing for safe disposal according to regulations. The liquid also acts as a cooling system, giving the electrode a highly polished finish, enabling the welder to achieve and maintain a stable arc. Furthermore, the Pro Point Plus's diamond grinding wheel has three position settings, tripling the life of the wheel. The grinding angle is simply set using the digital readout


PIPE was delighted with the response at the show

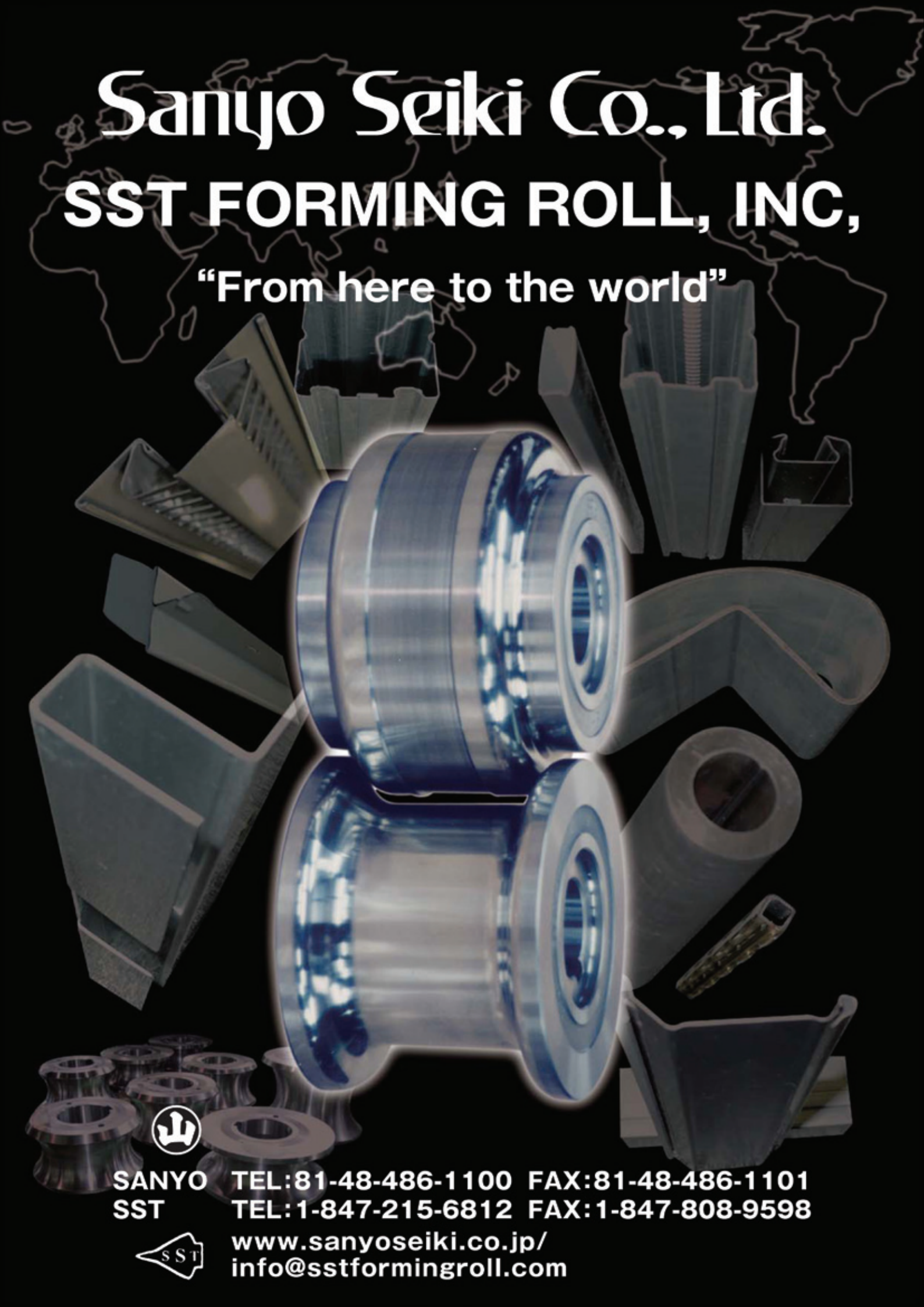
on the case. Never before has cutting and grinding tungsten electrodes so accurately been so easy.

PIPE Ltd – UK
Website: www.pipe-ltd.com

Sanyo Seiki Co., Ltd.

SST FORMING ROLL, INC,

"From here to the world"



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Tube Düsseldorf reports excellent business and more exhibitors than ever

TUBE Düsseldorf closed its doors recently after achieving a new exhibitor record. During the five trade fair days, around 2,500 companies from all corners of the globe provided information on the latest machines, plants and products from the tube processing industries and wire and cable industry.

Exhibitors reported excellent interest in purchasing and that many deals were made and new, interesting business contacts were acquired, and there was high praise for the visitor quality.

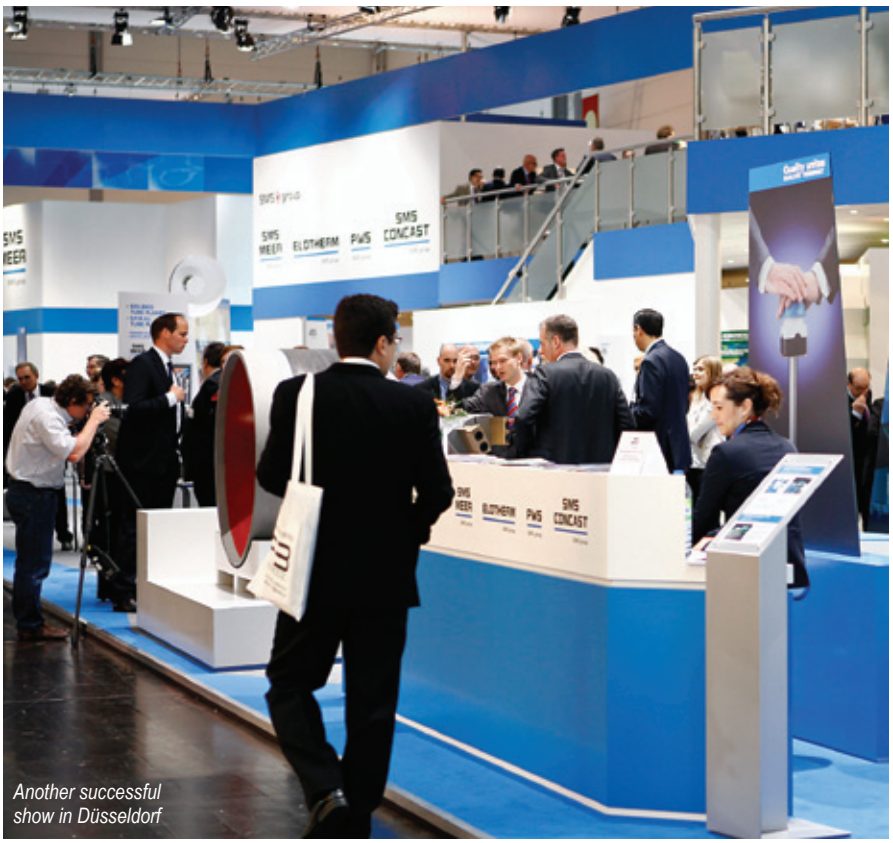
"For us as trade fair organisers, the somewhat euphoric mood in the exhibition halls, the orders made here and the expectation of good post-fair business are important indicators that we are right with the trade fair date and the product range," Joachim Schäfer, managing director, Messe Düsseldorf GmbH, said.

"Companies invest heavily in Düsseldorf in order to remain present among the international competition," adds Friedrich-Georg Kehrer, director of Tube 2012. "Here, the companies meet qualified business partners from all over the world, and many new contacts are made as well," he said.

A total display area of more than 106,000m^2 was booked. This is a new record even compared to the well attended previous events in the years 2010 and 2008.

All in all, 73,500 trade visitors from 111 countries visited the exhibition centre on the River Rhine over the five days. This is an increase of 6.3 per cent compared to 2010. In that year, 69,200 trade fair visitors came from around 100 countries.

"We are very happy with the results of Tube 2012," said a content Norbert Keusen, president and CEO of V&M Deutschland GmbH. "We were able to intensify our contacts with the professional audience and presented our broad product range for the industry in detail. In particular, we had exciting talks about our new tube solution PREOn marine for low noise and space-saving construction of offshore windmills."



Another successful show in Düsseldorf

With 1,184 exhibitors from 48 countries, the Tube exhibitors occupied an overall display area of approximately 49,000m^2. In comparison with its 2010 event, Tube achieved even more area coverage. In 2012 it can report a display area increase of 9.4 per cent.

On display at Tube 2012 was the entire product and service range, from tube manufacturing via tube processing to tube machining. The offer range included raw materials, tubes and accessories, machinery for the production of tubes, process technology tools and auxiliary materials.

Profiles and profile technology, measurement and control technology, test engineering and speciality topics such as warehouse automation monitoring and control systems complemented the range of products and services offered at the trade fair.

The main focus of Tube was again the area of tube trade. Third-time participants were the areas of pipelines and OCTG technology (oil country tubular goods). This is an expanding area against the backdrop of major international pipeline projects such as Nabucco, North Stream and South Stream.

The trade visitors of Tube and wire again assessed the two top events overall as excellent.

In comparison with the previous events, the evaluation of the products and services on offer has again improved. German and international visitors to the two trade fairs gave excellent marks for the offer range of the fairs.

In addition, there were more first-time visitors to Tube this year than in previous years.

In spring 2014, the leading trade fairs Tube and wire will be held in Düsseldorf for the 14th time from 7-11 April 2014.

Tube Düsseldorf – Germany
Website: www.tube.de

MJM

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FABTECH 2011 breaks records and exceeds expectations

FABTECH 2011 culminated with a total of 1,360 exhibiting companies covering an astounding 523,740ft^2 of floor space. More than 35,000 attendees were present at the Chicago event at McCormick Place, making this the largest FABTECH to date.

The organisers said that exhibitors invest in FABTECH to generate sales leads and 2011 was no different. In fact, 29 per cent of exhibitors reported FABTECH exceeded their lead generation expectations. Beyond lead generation, FABTECH exceeded expectations in image building, being able to demonstrate new technology and as a platform for new product launches.

FABTECH is a 'key industry resource' according to show attendees, with 57 per cent reporting in post show surveys that FABTECH exceeded their expectations as an overall event. Visitors came to see and evaluate new products/technologies and were very pleased, with more than 35 per cent being exceedingly satisfied. Seeing equipment in action is always another primary reason buyers annually visit FABTECH. In 2011, exhibitors demonstrated thousands of products with nearly 41 per cent of attendees saying their expectations were exceeded. When buyers think about new technology, FABTECH is the place they come to see the latest and greatest available to the world.

Some key audience facts included: 52 per cent were first time attendees and 61 per cent attend no other show; 29 per cent had job titles of corporate executive/top-level management or job shop owner; 11 per cent of attendees came from outside the US; 82 per cent of visitors are involved in some way in their company's purchasing plans; 44 per cent indicated budgets of $200,000 or more to spend on products and services; 52 per cent of attendees plan to make a purchase in the next 6 to 9 months.

The momentum of FABTECH continues as the show heads to Las Vegas, 12-14 November 2012 in the Central and North Halls of the Las Vegas Convention Center. The previous Las Vegas show proved to be an outstanding opportunity to reach the western manufacturing market and this year will be no exception. The Las Vegas venue also attracts a large number of buyers from the Midwest, Western Canada and internationally. If you have not booked your space already, be sure to contact a sales representative below to see what is available.

Fabricators & Manufacturers Association, International – USA
Fax: +1 815 484 7701
Email: information@fmafabtech.com
Website: www.fabtechexpo.com

Elcometer expands its operations in Europe

FOLLOWING the successful opening of its offices in Japan, Elcometer is pleased to announce the expansion of operations in Western Europe.

Elcometer has completed the expansion of its sales and service facilities in Germany. "The increase in demand for our products and services, when coupled with the launch of a new range of ultrasonic NDT products in the new year, has meant we simply had to expand our offices," said Markus Biess, sales manager, Elcometer Instruments GmbH. "The doubling of our offices will allow us to further enhance the high levels of service and support our customers demand and we look forward to exceeding their expectations into the future."


Philippe Marzin

To strengthen its pan-European strategy and further strengthen its sales in key West European markets, Elcometer has also appointment Mr Philippe Marzin to take responsibility for all Elcometer European sales offices in the UK, France, Germany, Belgium and the Netherlands as well as its Western European distribution network.

Elcometer – UK
Email: sales@elcometer.com
Website: www.elcometer.com

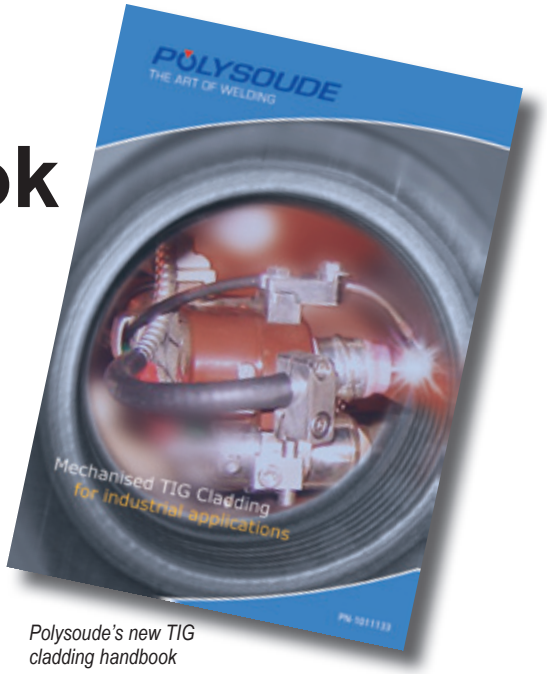
Technological partnership

TECHNIP has signed a strategic partnership agreement for innovation and technology development with the French Alternative Energies and Atomic Energy Commission (CEA).

Based at the heart of a very strong scientific, industrial and academic environment, located in Paris and Grenoble (France), the Technological Research Division at CEA (DRT) gives access to over 4,500 researchers and is focused on the development of new technologies in the fields of energy, transport, health, information and communication. The CEA-DRT, the largest French Research and Technology Organization (RTO), is on the cutting edge of the technological research and has a very active role in transferring knowledge towards industry.

Technip – France
Website: www.technip.com

Polysoude publishes TIG cladding handbook



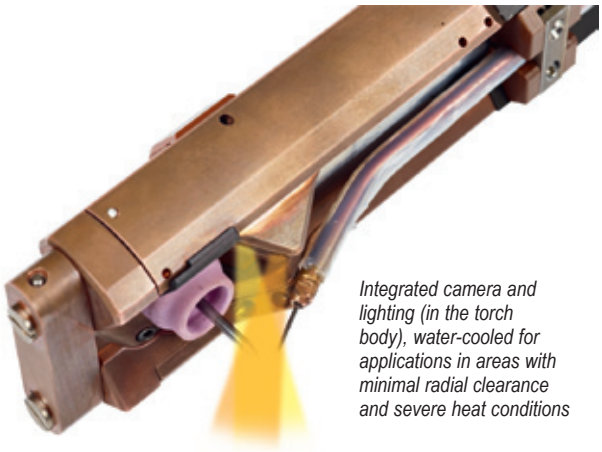
Polysoude's new TIG cladding handbook

DURING the Industrie 2012 (Paris) and Tube and wire 2012 (Düsseldorf) trade fairs, Polysoude, an expert in TIG/plasma automated procedures, published the first handbook for 'Mechanised TIG Cladding for Industrial Applications'. The 48-page guide contains information and an in-depth insight into the technology and know-how of this high-potential process. Industrialists will find helpful information and assistance on the subject, as well as practical tips and advice as to the various uses of TIG cladding.

Flexibility, excellent surface quality of TIG welds, and the possibility to weld in all positions are determining factors that have led Polysoude to the automation of this process in response to the growing industrial demand.

The main advantages of the TIG process are that it allows for mastery of the weld pool in all positions, achieved thanks to high flexibility in the adjustment of welding parameters; and the possibility to control and supply the required amount of energy accordingly, enabling the respect of the characteristics of the material and in the particular case of cladding, to reduce the surface dilution level using exclusively one or two successive layers.

Polysoude, with over 50 years' experience in the field of orbital and mechanised welding, has accelerated the development of equipment and welding operating procedures for cladding operations using the TIG process and its variants. One such variant is the buttering of the ends of workpieces, for example in the case of heterogeneous joints.



Integrated camera and lighting (in the torch body), water-cooled for applications in areas with minimal radial clearance and severe heat conditions

Cladding operations that use the TIG process are widely used in the repair of high-value added worn parts in service or following manufacturing anomalies during machining; and preventative cladding operations using materials that are resistant to mechanical wear and tear, abrasion and corrosion.

In order to monitor the welding process, the operator can be assisted by a video system, exclusive to Polysoude. This supplementary quality guarantee consists of cameras mounted close to the torch, or even integrated in the body of the torch for more difficult cases, such as limited access or harsh/extreme environments such as preheating.

Polysoude SAS – France
Email: info@polysoude.com
Website: www.polysoude.com

Core competence and innovation

INDIA belongs to the five biggest producers as well as to the five largest consumers of steel in the world, with an estimated growth of 16 per cent until 2012.

Additionally, planned investments from the Indian government as well as major investments by international steel companies further strengthen India's steel industry.

The building and construction industries along with the oil and gas sector are the major marketplaces for pipe in India. With the construction market booming and further development of new markets for steel pipes ranging from commercial framing to water pipes, the future of the steel tubing industry certainly looks bright. Rising business opportunities in the Indian oil and gas sector and the rapid growth in the Indian petroleum sector call for a country wide pipeline infrastructure.

The organisers have therefore invited readers to participate in the 5th edition of South Asia's successful business-to-business platform for the tubes and pipes and metal industry – Tube India International 2012/Metallurgy India 2012.

Starting from 2012 the proven trade fair duo takes place parallel to Wire & Cable India. Exhibitors and visitors from all industries will benefit from this triple constellation.

Invaluable synergies for exhibitors and visitors are also created by the parallelism with India Essen Welding & Cutting 2012, which is held in hall 6, and the conferences, workshops and seminars which will round off the events.

Companies can use Tube India International 2012/Metallurgy India 2012 as a platform to showcase their products, technology and know-how to the decision makers of the region and to strengthen their position in India.

Messe Düsseldorf – India
Email: schreiberg@messe-duesseldorf.de
Website: www.messe-duesseldorf.com

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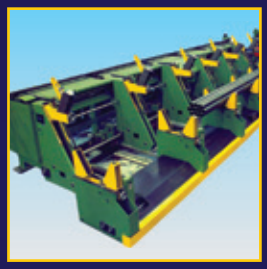
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Bureau in Cairo moves to Dubai and becomes sales and service office

IN January 2012 Sikora established the Sikora Middle East office, based in Dubai, UAE. The office supports customers in service as well as sales questions.

In 2008 Sikora opened a service bureau in Cairo, Egypt to optimally serve customers in the Arabic region.

Due to the continued political tensions in that region the headquarters moved to Dubai. Head of Sikora Middle East is Karim El Nahas.

Previously, he was responsible for the service bureau in Cairo. The office in Dubai offers Sikora the opportunity to optimally fulfil the increasing demands of Arabic customers with individual service and reliable customer support.

Customers receive service from 11 Sikora offices worldwide to assure a quick and reliable customer service. They work together with more than 30 regional representatives worldwide.

Sikora AG – Germany
Email: sales@sikora.net
Website: www.sikora.net

Karim El Nahas is head of Sikora Middle East

Record number of orders in 2011

INDUSTRIAL Magnetics Inc, a designer and manufacturer of innovative magnetic lifting, fixturing, conveying and separation solutions for a wide variety of industries, has announced that the company booked 11,813 orders in 2011, setting a record high.

"As we celebrated our 50th year in business in 2011, we could not have been more pleased to also celebrate a record number of orders and the highest grossing year in our company's history," states IMI's general manager, Dennis O'Leary.

"I think our dedication to providing the right product for the application, at the right time for our customer has been an integral part of our success."

Bud Shear, president, adds: "We are extremely grateful to our customers, suppliers and employees who support our mission of being an organisation that's recognised for product quality, ethical values and expertise, as well as the best source of creative solutions and products in the industries and markets we serve. We're looking forward to what's already starting out as another promising year."

Since 1961, Industrial Magnetics, Inc has been an industry leader in providing innovative permanent and electromagnetic solutions to meet the exact needs of applications in the automotive, appliance, metalworking, food processing, packaging, aggregate, mining, recycling industries and more.

Industrial Magnetics – USA
Email: doleary@magnetics.com
Website: www.magnetics.com

Ameritherm rebrands to Ambrell

AMERITHERM, an induction heating systems provider, has announced that it is rebranding to "Ambrell – an Ameritherm company" worldwide. The Ambrell brand was introduced outside of the USA several years ago thanks to considerable international growth, and the updated branding enables Ambrell to exhibit one unified brand across the world.

Ameritherm was founded on the philosophy of delivering induction heating solutions with superior responsiveness. That philosophy has enabled the company to grow into an organisation with more than 10,000 system installations in more than 50 countries. That demand has necessitated several expansion projects at its global headquarters in suburban Rochester, New York while sales and laboratory offices have been added around the globe.

With a single brand and a unified message displayed across the world, it will help facilitate further growth. Cheltenham Induction Heating rebranded to Ambrell Ltd in 2011 and now with Ameritherm rebranded to Ambrell, all of the Ameritherm companies will be unified with Ambrell branding. So regardless of where a customer operates, they will see the same branding.

"This rebranding effort is driven by our rapid international growth," says chief executive officer Richard Rosenbloom. "We will now have one face around the world, so customers who operate internationally will see the same brand at each site and know they're working with the same great systems. However, the Ameritherm name will not be forgotten, as Ambrell is and always will be an Ameritherm company."

Ambrell – USA
Website: www.ambrell.com

AICON 3D Systems announces new North American office

AICON 3D Systems, a specialist in photogrammetry for industrial 3D measurements, has opened an office in Plymouth/Michigan, USA to support its expanding operations in North America. Headquartered in Braunschweig (Germany), AICON 3D Systems GmbH has existing regional offices in Seoul (Korea) and Luxembourg. This announcement represents its first direct presence in North America.

The new office will be headed by Paul Joss to serve as AICON's North American general manager. Mr Joss previously managed new industries marketing efforts for Perceptron Inc. AICON's North American office will focus on strengthening and expanding the distribution network for its innovative products in Canada, Mexico and the USA. The new office will also support the company's existing resellers and customers in the region.

"Our business has been growing consistently as more manufacturers recognise the unique capabilities and value of AICON products. North America is a very important strategic market for us and we believe customers there will benefit from increased access to AICON products," explains Dr Werner Bösemann, managing director of AICON 3D Systems. "AICON excels at complex portable metrology for engineering, testing and manufacturing environments, which makes our products a very good fit for the many advanced engineering, manufacturing and industrial operations that exist in North America."

AICON 3D Systems is a leading providers of optical camera-based 3D measurement systems. The company, founded in 1990, develops and distributes systems for the business areas of inspection and testing including car safety and tube inspection. AICON's reference list boasts renowned automotive manufacturers and suppliers, companies from the aerospace industry, and the areas of shipbuilding and renewable energies. Its latest products for automated test and process control open new worldwide market fields and obtain outstanding growth.

AICON 3D Systems – USA
Website: www.aicon3d.com


Paul Joss

Manufacturing expansion for SSC

THE expansion of Staffordshire, UK firm SSC Laser is set to continue following the successful launch of a new manufacturing site in the East Midlands.

The laser cutting specialist, which is headquartered at a 28,000ft² facility at Hixon near Stafford, established the new Derby factory in January and the site is now fully operational, employing nine people.

The firm, a specialist in sub contract laser profiling, announced record turnover of over £5mn at the end of August 2011 and plans are now in place to open further UK manufacturing sites as early as this year, with the North East the first likely beneficiary.

SSC Laser Cutting continues to expand

Sales director Andy Evans said of the new set-up: "It's ironic because the factory we have moved into is on the old Qualcast site on Victory Road in Derby and our sister company Turfmech Machinery recently acquired the manufacturing rights to build Qualcast mowers at our factory in Hixon near Stafford." Derby is the first of what is planned to be an aggressive roll out of manufacturing operations for SSC Laser, which has sales offices around the UK.

The company, which also provides press-braking, laser scanning and an in-house CAD service, harbours ambitions to establish SSC Laser operations in every major city in the UK.

Mr Evans said: "These are really exciting times for us. We have opened a sales office in Slough at Regus on the Bath Road and that office now employs two people. Lawrence Cairns is the Southern sales manager and he has been joined by Ian Coltman as a sales estimator. The plan is for Lawrence and Ian to build the business over the next 18 to 24 months and we will then commit to a manufacturing facility in the area." Sunderland, which missed out to Derby in becoming the firm's first manufacturing facility outside of Staffordshire, may welcome expansion later this year.

Mr Evans added: "February 2012 will see a brand new Bystronic Byspeed Pro 3015 Flat Bed Laser installed at the Hixon division and there are plans to expand the operation in Sunderland later in 2012 by opening a manufacturing facility, using the same business model as the Derby site."

SSC Laser Cutting – UK
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Website: www.steelservicecentre.co.uk

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Transportation award at steel tube and pipe conference

UNION Pacific Railroad was named Logistics/Transportation Provider of the Year at the 2012 American Metals Market (AMM) Steel Tube and Pipe Conference. The award recognises a transportation or distribution company that best meets the needs of the tube and pipe industry. Union Pacific was recognised for its Pipeline Express Product.

"It is an honour to win this award from American Metals Market," said Eric Butler, Union Pacific vice president and general manager – industrial products. "Union Pacific recognises the importance of providing a turnkey operation to the pipe industry and is constantly striving to improve the logistics of transporting these materials as safely and efficiently as possible, helping the industry grow."

Each year, a panel of judges from leading businesses in the tube and pipe industry and members of AMM's editorial team determines the winners. The panel bases its selection of award winners on company performance in the areas of customer support, service, on-time pick-up and delivery, fuel cost containment, safety and technology.

150 years ago, Abraham Lincoln signed the Pacific Railway Act of 1 July 1862, creating the original Union Pacific. Today, the company is the principal operating company of Union Pacific Corporation, linking 23 states in the western two-thirds of the country by rail and providing freight solutions and logistics expertise to the global supply chain.

From 2000 to 2011, Union Pacific spent more than $31bn on its network and operations, making needed investments in America's infrastructure and enhancing its ability to provide safe, reliable, fuel-efficient and environmentally responsible freight transportation. Union Pacific's diversified business mix includes agricultural products, automotive, chemicals, energy, industrial products and intermodal. The railroad serves many of the fastest-growing US population centres.

Union Pacific won for helping the tube and pipe industry

Union Pacific Railroad – USA
Email: tomlange@up.com
Website: www.up.com

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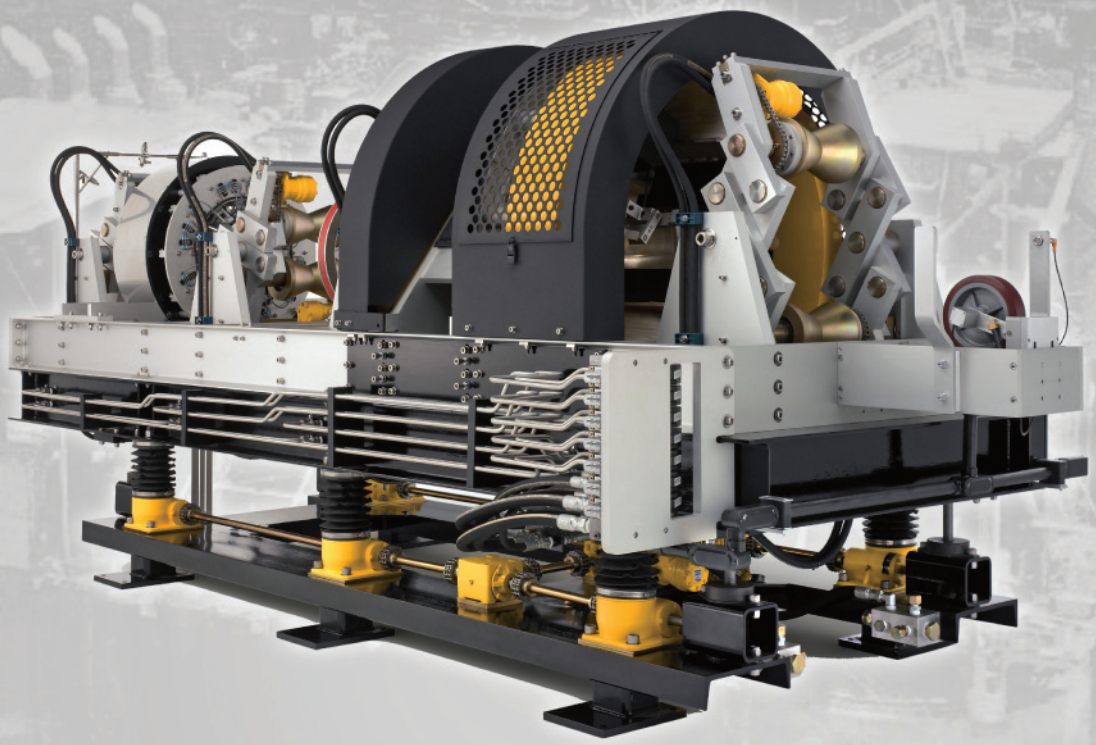

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Arc Machines UK regional director promoted to vice-president

ARC Machines Inc, the global leader in the design and manufacture of automated orbital welding equipment, has promoted Mike Allman to the position of vice-president, Europe, with immediate effect.

The new role will give Mr Allman responsibility for all Arc Machines European, Middle East and African operations, which are managed through offices in Germany, Switzerland and the UK, all of which will now report directly to him.

A key part of his role involves bringing strong leadership to bear on the German, French, Italian, Spanish, Scandinavian and Benelux markets along with the emerging regions of Russia, Middle East and Africa, where the demand for high quality automated orbital welding equipment offers significant opportunities for growth.

Mr Allman, who joined the business 18 months ago, secured this new senior management role following successful restructuring of the UK operation, which, thanks to his leadership, has seen Arc Machines UK sales grow by more than 50 per cent.

This appointment also represents a significant milestone for Arc Machines and will enable the business to considerably strengthen its European operations through an even more customer focused operation, with improved communication and coordination and closer links with the company's other international operations.

Mr Allman's ability to run a complex, technology driven organisation can be attributed to extensive engineering, commercial and business experience gained in the oil industry with BP and within UK and European-based businesses at company director level.

These changes at Arc Machines come at an exciting time and follow on from the UK business's relocation last year to a custom-built facility in Daventry, where all UK operations are now centred under one roof, providing proactive support to customers and promoting the launch of new products.

As a consequence of the promotion, Arc Machines UK is currently recruiting for a new country manager to take over responsibility for both the UK and Irish markets.

Arc Machines – UK
Email: john@arcmachines.co.uk
Website: www.arcmachines.com

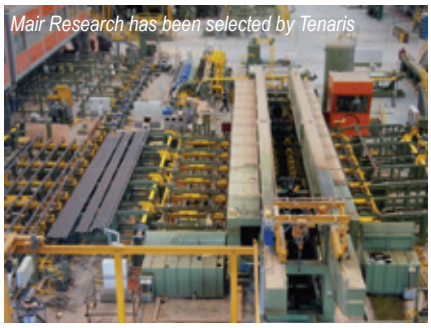
Mair Research awarded contract for tube testing machine

MAIR Research SpA has been selected by Tenaris for the supply of two high-pressure hydrostatic testing machines for the Tenaris Tamsa Plant in Veracruz, Mexico.

The two machines will be installed on the finishing lines for tubing and casing production, which will process the OCTG seamless tubes, with a maximum outside diameter of 177.8mm, produced by the new hot rolling mill.

Both machines will carry out the testing operation on tubes at high pressure values (15,000 psi – 1.035 bars) in accordance with API 5CT specifications, and they incorporate innovative design features in order to allow high production performances, easy machine operation and quick changeover times.

Mair Research SpA has a full capability to design and manufacture complete and integrated finishing lines for tubes according to API standards.



Mair Research has been selected by Tenaris

Mair Research SpA – Italy
Email: salesdept@mair-research.com
Website: www.mair-research.com

New name for Rofin-Lasag AG

ROFIN's new subsidiary, Lasag, headquartered in Thun, Switzerland, has changed its name to Rofin-Lasag AG. The Swiss company is a manufacturer of solid-state laser solutions for high-precision laser processing, and is the newest addition to the Rofin group.

The main competences of Rofin-Lasag are laser cutting, welding, drilling and ablating of metals and other materials that are employed in almost all markets of the manufacturing industry.

Rofin-Baasel Lasertech GmbH & Co KG – Germany
Fax: +49 8151 776 4159
Email: sales@baasel.de
Website: www.rofin.com

Contracts awarded in Bulgaria and Ghana

TECHNIP has been awarded by Lukoil Neftochim Burgas ad, a subsidiary of OAO Lukoil, a lump sum turnkey contract worth more than €900mn (with Technip's share being around €600mn), for the engineering, procurement and construction of phase 1 of a heavy residue hydrocracking complex to be built at its refinery in Burgas, Bulgaria.

The contract covers the detail engineering, procurement of equipment and material, construction, pre-commissioning and commissioning of a 2.5mn tons/year vacuum residue hydrocracker based on Axens H-Oil process, as well as amine regeneration unit, sour water stripper, hydrogen production units, utilities and off-sites upgrading.

Nello Uccelletti, Technip senior vice president onshore, stated, "We are proud to have been chosen by the Lukoil Group for this major project. This award recognises the know-how and expertise of our teams. It also confirms Technip's leadership in the field of refining after projects such as Dung Quat in Vietnam, Jubail in Saudi Arabia, and Algiers Refinery in Algeria."

Technip's operating centre in Rome, Italy will execute the contract, which is scheduled to be completed by the end of January 2015.

The contract follows the successful execution of the front-end engineering design completed by Technip in the first quarter of 2010, and the detailed engineering and procurement services contract won at the beginning of 2011.

Technip has also been awarded two contracts, worth approximately €100mn, by Tullow Ghana Limited for phase 1A of the Jubilee project.

The Jubilee field is located offshore Ghana at a water depth of 1,300m. The contracts cover full project management, engineering, fabrication and installation of a new flexible riser, two rigid flowlines and 11 spools/jumpers, as well as the installation of two manifolds and 5km of umbilicals.

The company's operating centre in Paris, France will execute the project, with the support of the group offices in Houston, Texas, and Accra, Ghana. The flexibles will be fabricated at the group's facility in Le Trait, France.

Offshore installation is scheduled to be completed with the Global 1200 and the Deep Pioneer, two vessels from Technip's fleet, in the second half of 2012.

Technip – France
Website: www.technip.com

Beckwood Press hires sales engineer


Josh Dixon

BECKWOOD Press Company has appointed Josh Dixon as sales engineer. In this role, Mr Dixon will act as a primary customer contact, applying company technologies and capabilities to each customer's application.

Beckwood is a hydraulic press and automated systems supplier, located in St Louis, Missouri, USA. It offers a variety of customised hydraulic presses (from 2 to 2,000+ tons) and standardised bench top presses (3 to 40+ tons). The company is also the contract manufacturer for the Triform line of sheet hydroforming presses for Pryer Technology Group (PTG).

Mr Dixon works closely with Beckwood's engineering and manufacturing departments to accurately relay critical project details received from one-on-one interactions with the customer. In addition to completing several hydraulics courses, Mr Dixon attended the University of Missouri-St Louis, where he received a Bachelor of Science degree with an emphasis in business management.

Beckwood Press Company – USA
Fax: +1 636 343 4424
Email: info@beckwoodpress.com
Website: www.beckwoodpress.com

Major machinery investment

ARC Energy Resources is a UK-based specialist in weld overlay cladding and fabrication services, employing 75 staff. Earlier this year the company announced a major investment programme and the renewal of three key certifications.

The key investment involves two new rotating head welding machines costing £500,000, which will increase productivity and extend the size and scope of work the company can handle. This follows success in winning several new contracts, prompting a review of the company's capacity to handle orders for cladding large and/or complex components. While workstations currently move components around a fixed welding torch, the new machines use automated controls to manipulate the welding torch around a fixed component, accurately positioning it to apply the overlay while working close to the component's footprint. The machines are capable of handling components that would normally be considered difficult to weld clad. The investment expands and enhances Arc Energy's ability to handle complicated component geometries for the full or partial cladding and fabrication of a huge range of component sizes up to 15 tons.

Other new machinery developments include an application to patent an innovative pipe manipulation system designed to increase the efficiency and quality of Arc Energy's corrosion resistant coating services.

Arc Energy technical and quality director Neil Cook says the system is a real benefit for customers as pipe positioning and manipulation are the most challenging aspects of the weld overlay cladding process and this new machine significantly improves both the efficiency of the process and the quality of the finished coating. The pipe manipulation system complements Arc Energy's fifteen cladding workstations, which are also designed in-house and feature state-of-the-art control systems developed to suit the company's specialised requirements.

The combination of workstations and pipe manipulation system provides more precise control and allows weld deposits to be laid to much finer tolerances and positioned with greater accuracy. A smoother finish also limits the amount of alloy used and reduces the post weld machining time, which results in a double saving for customers.

The company is able to clad bores up to four metres diameter and areas of restricted access within bores as small as 20mm diameter. Three of the workstations are specifically designed for pipe cladding and are equipped with the latest advanced control and inspection facilities, which provide the flexibility to handle a wide variety of projects and also help to make weld overlay cladding economically viable for industries outside the oil and gas sector. The company's weld overlay cladding expertise provides protection against corrosion and wear for a variety of process and pipeline equipment. Typical weld overlay materials include Inconel 625 & 825, Monel, Hastalloy and stainless steels amongst others. In addition, Arc Energy also offers in-house test weld, heat treatment, PMI and NDT facilities.

The three certifications – ISO 9001:2008 quality management, ISO 3834-2 fusion welding of metallic materials, and the internationally renowned ASME U and R Stamps – were renewed following stringent audits. Other qualifications include ISO 14001:2004 environment management and Investors in People; and later this year its Health & Safety management system will be audited for OHSAS 18001 certification.

Managing director Alan Robinson, one of very few UK registered European Welding Engineers, says few welding specialists can equal Arc Energy's accreditations or experience, emphasising its capability to support clients with highly qualified, experienced welding staff.

Arc Energy Resources – UK
Email: sales@arcenergy.co.uk
Website: www.arcenergy.co.uk

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SMS Elotherm and Tech Induction to join forces

SMS Elotherm, Germany, the induction specialist in the SMS Meer business area, and Tech Induction Corporation, Detroit, have joined forces to improve the support of customers in North America. The new line-up will allow the two partners to offer a wider range of products and services. The result is an industry expert with a broad base of inductive solutions for North America – with a strong local presence for customers.

Also ensured is a more rapid and low-cost supply of spare parts to customers, service products of OEM (original equipment manufacturer) quality can be provided locally, the range of competent points of contact for modernisation projects and tool developments is improved further.

Tech Induction has been building and repairing inductors for more than 25 years. Customers include mainly the automotive industry as well as manufacturers of heavy machinery and agricultural vehicles in North America, Europe and Asia.

"Tech Induction enjoys an excellent reputation for innovative induction technology – this is exactly what our customers expect," said Dr Andreas Seitzer, managing director, technology and sales, at SMS Elotherm.

"Especially business partners in the SMS Elotherm GmbH is a company of the SMS group which, under the roof of the SMS Holding GmbH, consists of a group of companies internationally active in plant construction and mechanical engineering for the steel and non-ferrous metals industry. The USA will directly profit from the extended range of products and services. Together we are even closer to the market and can now respond more flexibly to customer demands." Products such as hardening inductors and heating coils will now be manufactured at two locations: in Remscheid, Germany, and in North America.

Tech Induction will contribute to the joint business a 3,500m^2 production workshop in Detroit, the heart of the US automotive industry. This includes the company's own R&D department plus a repair shop for inductors.

The Tech Induction brand will be maintained as part of the newly founded SMS Elotherm LLC. The former managing director, Darren Martens (president and CEO), will continue business in this position and ensure a positive continuity. SMS Elotherm will be managed in the USA by George Burnet.

SMS Elotherm – Germany
Email: thilo.sagermann@sms-group.com
Website: www.sms-elotherm.com

Fluid systems to treat exhaust gases

NORMA Group has secured a large order from a vehicle and engine manufacturer to develop and manufacture fluid systems for the transportation of fluids into the exhaust pipe to reduce nitrogen oxides. The product solutions are manufactured for a series of different vehicle platforms. Production will start in 2014.

The fluid pipes are an integral part of the selective catalytic reduction (SCR) technology that reduces nitrogen oxides in exhaust gases. The components of the Normaflex product group used for this order include heated pipe systems and joining technologies of thermoplastics that convey urea into the exhaust pipes. Higher exhaust emission standards increase the demand for new technologies to treat exhaust gases.

Norma Group manufactures a wide range of engineered joining technology solutions in three product categories (clamp, connect and fluid), offering more than 35,000 products and solutions to approximately 10,000 customers in 80 countries. The engineered joining products are employed in vehicles, shipping, trains, aircraft and domestic appliances as well as engines and water pipelines. The company operates a network of 17 manufacturing facilities and ten additional sales and distribution sites across Europe, North, Middle and South America, and Asia Pacific.

Norma Group AG – Germany
Website: www.normagroup.com

Logistics firm expands

GARY Phillips, commercial manager of Rhys Davies Freight Logistics, has taken over responsibility for the company's freight forwarding division, with a brief to significantly expand its operations during the next two years. Rhys Davies Forwarding already provides export services, offering a one-stop service for the import and export of a wide range of goods, as well as goods more difficult to manage such as hazardous materials, gases, chemicals and oversize products, to and from any location in the world.

Rhys Davies Forwarding has been operating for 20 years and has developed close working relationships with trusted partners across the globe. Some shipments are particularly challenging. For example, one customer regularly needs to transport refrigeration gases in 40ft tanks to the Middle East, including Libya and Syria, so reliable contacts and an in-depth knowledge of the regulations regarding moving goods through war zones is essential.

Rhys Davies Freight Logistics – UK
Email: gary.phillips@rhysdavies.co.uk
Website: www.rhysdavies.co.uk

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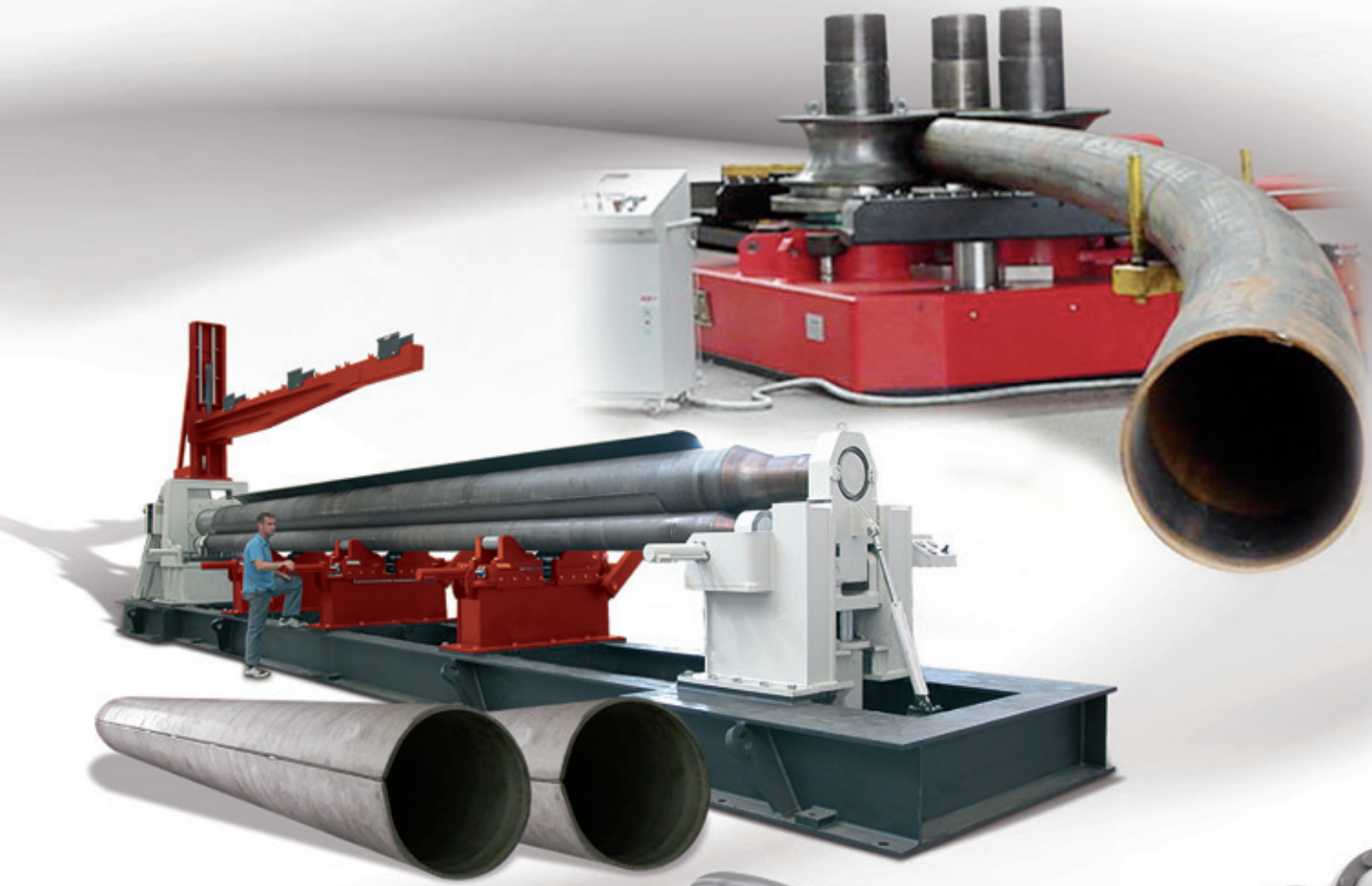

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Control in composite pipes production lines

Integrated in the extrusion line the X-ray measuring system X-RAY 6000 measures the wall thickness, eccentricity, the inner and outer diameter and the ovality of hoses and tubes

A MEASURING device can be very progressive and precise: with just its integration in the production line it does not provide hose and tube manufacturers with decisive advantages. Only when it directly controls the process can the production be managed. The following example shows the different control methods in composite pipe extrusion lines.

Composite pipes are made of an inner PE-tube, on which a thin aluminium layer is applied, covered by an additional outer PE-layer. The plastic layers are each connected with the aluminium by an adhesive layer. With an X-ray measuring system like the X-Ray 6000, the inner and outer diameter as well as the wall thickness of the single layers of the composite pipe can be measured and controlled. Moreover, faults in the inner tube can be detected.

The improvement of the production process is nowadays possible with an automatic control of the line without intervention of the operator. From the setpoint-actual value difference of the diameter respectively the wall thickness the correcting variable is continuously calculated by a control module and directly transferred to the line control, for example via a Profibus interface. The correcting variable considers the product specific minimum values, the eccentricity and statistical data. This method is the most modern type of control because control parameters are directly transmitted to the line control via the Profibus interface.

Not every line can be controlled in this advanced manner. There are many lines with direct current drives. These usually work with a 0 to 10 volt signal. 0 means standstill of the line, 10 volt maximum line speed or extruder rpm. Both variables can be controlled alternatively continuously with highest precision to the nominal value. The specification of tolerance limits is not required.

Rarely, we find contact controls (motor potentiometer). For this type of control the operator has two buttons to run the line faster or slower. Via the buttons motor potentiometers are controlled. Later, the buttons were replaced by contacts of a control module. This, in the 80s modern control, worked discontinuously and required that a tolerance band was accepted with no intervention in the control.

There was always the question of a hot or cold value control. If the hot diameter measured and controlled, the material shrinkage is an unknown variable. The difficulty is that not the complete diameter is shrinking, but only the outer PE-layer. That is why the specification of a fixed percentage shrinking value is not a solution. Depending on the product type a separately calculated shrinking value has to be considered.

Alternatively to the hot value control a control from the cold end is possible with limitations. For processes that run with low line speeds this method is less suitable as the feedback about product parameters is only late as a result of the time delay.

During the early 1990s Sikora launched a Hot-Cold-Control. This at that time patented method that combines the advantages of the fast measurement and control of the hot value control with the product dimensions, which are relevant for the end customer, namely the cold measuring values. From the hot/cold value difference the material shrinkage is continuously calculated and is automatically considered for the control of the diameter.

Due to specific line configurations or product structure it is not always possible to install a measuring system directly after the extruder.

For these applications a software concept with a virtual hot gauge head is used, which learns the control behavior of the line and conducts the hot/cold control by means of calculations without a hot measuring head.

With regard to the diameter and wall thickness the line speed or the extruder rpm are controlled. As there are often reservations that, with an extruder control, the thermal balance is disturbed, hose and tube manufacturers prefer line speed control if the line is equipped with only one extruder. However, for tandem lines the control of the extruder rpm is typical.

In combination with the processor system ECOCONTROL 6000 the production data are visualised and controlled

Sikora AG – Germany
Email: sales@sikora.net
Website: www.sikora.net

transfluid process improves production performance

IF special requirements are required from a machine, sometimes less is more in order to optimise high-quality results. The area of tube bending technology proves that as with transfluid Maschinenbau GmbH, which offers a solution that links its simple processes intelligently and effectively with each other.

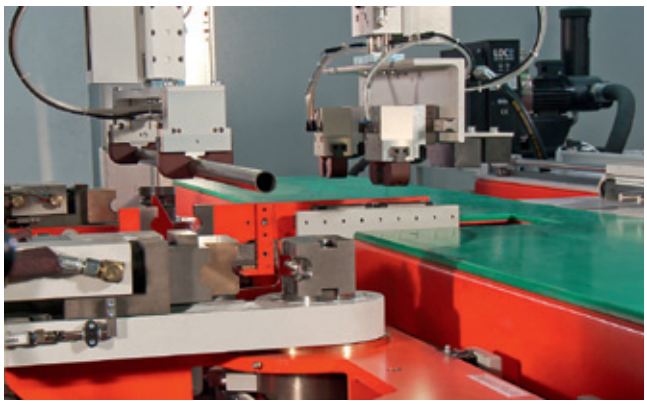
After listening to customer requests transfluid specialists have developed an economic system for the automatic production of closed tube frames with up to six bends. The frame ends are reduced and merged during the bending process. The complete equipment solution includes an additional pressing device in which the fabricated tube frames are inserted automatically.

"The challenge was to create an optimal process for our customer, which ensures efficient results fast and easy. And that with a cycle time of only 15 seconds," explains Gerd Nöker, managing director of transfluid. At the establishment and development transfluid makes a point from the beginning that the entire system can be operated up to one hour without the deployment of personnel. For this purpose, the solution has a tube bunker that can accommodate 240 tubes with a diameter of 30mm. After the separation process again the lengths are measured and one tube end is reduced automatically, so that both ends can be implemented into each other later.

The bending process is performed by a transfluid double-head bending machine, which is equipped with two axially servo-electric positioned heads. "The two bending heads are always in use simultaneously, and the drive is also performed servo-electric," said Mr Nöker. "The positioning of the workpiece in the bending process provides the automatic connection of the ends, creating a closed frame." Finally the automatic removal and feeding into the pressing device takes place. There various embossing punches fix the frame. By attaching different flattenings and punchings it is guaranteed that during the later painting the paint can run smoothly.

transfluid Maschinenbau GmbH – Germany
Email: info@transfluid.de
Website: www.transfluid.de

Tube bending from transfluid



HPC – internal line-up pipe clamps

THE welding quality in pipeline construction is crucial and has to fullfil worldwide standards, certified by international authorities. Companies like Norske Veritas have set up guidelines, to avoid defects and therefore environment and health risks, by use of the best pipeline equipment.

Line-up pipe clamps

Very important is the choice of the correct internal line-up pipe clamp for weld preparation, to compensate tolerances of pipe manufacturers and to avoid edge misalignment during welding process. Internal line-up clamps are the most frequently used alignment equipment nowadays, because they provide a full access to the weld seam during the entire welding process.

The innovative new HPC system was demonstrated for the first time at Tube 2012 in Düsseldorf. The hydraulic system is available for all sizes from 6" to 60" and is available as manual or fully remote controlled system. Compared to external clamping systems, the HPC offers a fast and accurate adjustment, no tag weld is needed and the root pass can be done directly. It helps to avoid oval pipe problems and can be used for pipes with different wall-thickness. An equal force is applied by all around-shoes which provide a precise axial adjustment. Internal line-up of pipes in pipeline construction can be done with hydraulic or pneumatic internal clamps.

Compared to pneumatic internal systems the hydraulic drive provides many advantages. The feet do not have to be adjusted to each ID and the HPC has a bigger range of clamping than pneumatic systems. No high pressure compressor is necessary on-site and maintenance of the system is reduced.

DWT GmbH – Germany
Website: www.dwt-gmbh.de

Compact new sideloader

THE noted Bulmor forklift group – manufacturer of the highly regarded Lancer and Baumann brands – has announced under the Bulmor flag the new compact sideloader range Qc 30-40 in distinctive blue corporate livery.

This range offers the specialist sideloaders in three and four ton capacities. They provide total versatility where maximum space utilisation and safe material handling are essential. The compact design saves space and financial outlay while incorporating the notable optimal ergonomics standard with the sideloader range including an adjustable joystick and elevated operator seat for unobstructed view and all-round vision.

Twelve inch wheels allow for a smooth ride and long distance performance – and as with all of the Bulmor range the new truck is robust and reliable. It is totally equipped with distinctive features and benefits without compromising on quality and incorporates the same masts, axles and hydraulic components. The Qc is equipped with standard road lighting and can easily be allowed to travel on streets.

As standard the Bulmor sideloader is equipped with a half-cabin but optionally available is a full cabin, which then comes with heater and ventilation. Equally, the large pneumatic tyres add to the driver comfort as much as the Pendeling system levels out shocks resulting from uneven ground.

The truck is available with Diesel and LPG models and Bulmor is proud to feature the Perkins engine brand because of its dependability, power and service support.

In a phrase the Bulmor Qc 30-40 is the essential proper and safe choice for specialist industry sectors.

Bulmor – Austria
Email: info@bulmor.com
Website: www.bulmor.com

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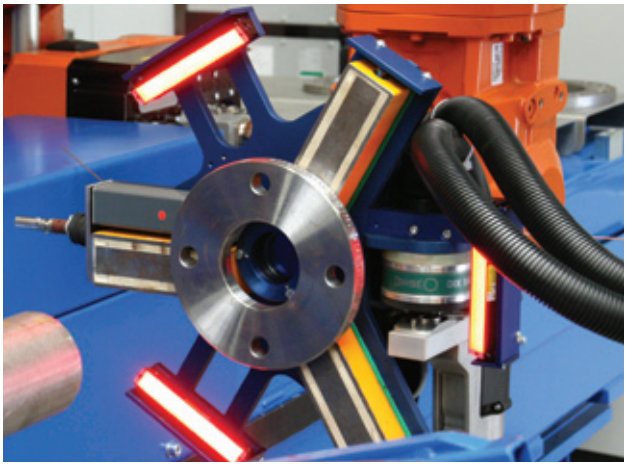
Robotic flange to tube welding cell

WHEN Dutch company Kranendonk was asked to assist with improving the weld quality, flexibility of production, and cycle and delivery times for pipe sections it responded by implementing the world's first robotic flange to tube welding cell.

The flange to tube cell is a robotic production system for assembly and welding of flanges and sockets to tubes for bespoke pipe infrastructure in the offshore, shipbuilding and petrochemical industries. This innovative system consists of four simultaneously operating robots mounted on a travelling track.

Using vision technology the robots automatically position, tack and weld a wide range of flanges and sockets to tubes of any desired length.



The information that is required for the system is loaded from the CAD-design. Since the pipes will be bent afterwards the deformation is calculated before hand.

The pipe is sawed on the correct length and based on the deformation information the orientation of the bolting holes is calculated. Two large robots pick up the flanges with special tooling. During pick-up the integrated vision system determines the position and orientation of the flange. The vision system compensates for dimensions of the tube and aligns the flange onto the tube. Two small robots tack the flanges to the clamped tube. After tacking, the tube is rotated at welding speed while all four robots simultaneously weld both flanges. After completion, the tubes are transferred to the output buffer.

The production line is operated by one operator using its full graphical operator interface. The menu structure and push buttons of the ARAC software automatically guide the operator to the right command to perform a certain task.

Combining the high accuracy, the faster delivery time and the easy control the system contributes to increase of productivity and more grip on your production process.

Kranendonk – The Netherlands
Website: www.kranendonk.com

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Our technology, your vision

Cameras that help to monitor fusion welding processes

MELTTOOLS LLC has developed a range of cameras for cost-effective visual monitoring of fusion welding processes. MeltView cameras automatically adjust to immense changes in light to provide a clear image before, during and after welding. The cameras are ruggedized against the welding environment and customised to fit automated and mechanized welding applications such as internal pipe cladding and tube/pipe welding.

Rework and scrap rates have a significant impact on profit margins, and a clear image of the melt pool enables the operator to detect product flaws in real-time and correct processing errors.

Other benefits of real-time visualisation include faster and more accurate set up of welds, reduced operator stress/fatigue and shared process monitoring among operators, managers, and quality assurance team.

Quality assurance may become integrated into production during in-process inspections, and visual records may be combined with process signal data as part of a product traceability program that enhances the manufacturer's reputation.

With today's sophisticated tube and pipe welding machines, a clear view of the melt pool is often difficult to obtain. It may be obscured by clamps, joint geometry, multiple torches, wire-feeders, sensors (including seam trackers and bead profilers) and shielding devices.

To meet this challenge, MeltView cameras are designed to fit into various work envelopes. In addition, many welding processes are hazardous due to high temperatures, trapping hazards and awkward positions (eg great or small heights), and a visual monitoring solution is essential for safe and accurate operation. MeltTools is committed to reducing the barriers to integrating visual-monitoring systems into today's welding equipment.

MeltView cameras feature integrated gas- or water-cooling for long-life and reliable function as well as an optional integrated gas-knife and replaceable spatter-guard to maintain a clear optical pathway under conditions of high spatter/vapour.

MeltView cameras are also available with integrated LED lighting. The video output is in convenient analogue format, which may be fed directly into a monitor for a simple and easy-to-maintain visualization system or may be converted to a digital record for process analysis and/or record keeping.

MeltTools LLC – USA
Website: www.melttools.com

High-speed steel and plastic pipe cutting machine

EXACT Tools Oy has developed a new method to cut pipes and has launched a brand new range of steel and plastic pipe cutting systems along with cutting accessories onto the UK market. These new innovative solution providers are available exclusively through Wilkinson Star Limited (Exact Tools UK Division), the Manchester, UK-based industrial equipment supplier.

The award winning innovative PipeCut range of pipe cutting systems are one of the fastest, easiest, safest and most precise ways to cut and bevel pipes and tubes on site producing a straight ready to install finished surface in a multitude of diameters and materials eliminating many of the problems associated with pipe cutting.

There are more than seven different models available ranging from the PipeCut 170 and 170E systems for cutting 15mm – 170mm diameter steel and plastic pipe to the PipeCut P400 for cutting and bevelling in one process, plastic pipe from 100mm to 400mm in diameter with a wall thickness up to 25mm. Each model can be supplied with a choice of three different blades – TCT (tungsten carbide tip) blades for general use in cutting steels, copper, aluminium, plastic and multi-layer materials; Cermet with ceramic tips for heavy duty applications such as cutting stainless steel and acid proof steel; and diamond discs for cutting cast iron pipes.

Exact pipe cutting systems are suitable for cutting a wide range of tubes and pipes including spiral duct tube ranging from 75mm to 1,000mm in diameter with wall thicknesses ranging from 1.5 to 6mm.

These systems are ideal for the professional industrial pipe installer employed in power generation, refinery and chemical plant, hospital and other construction sites, house building and renovation, shipbuilding, wood pulp, fresh and waste water systems, heating and cooling systems, gas installations, maintenance and repair work. They are very easy to use on steel, cast iron, stainless steel, aluminium, copper and most types of plastic.

The cutter firmly grips the pipe to be cut with the blade being automatically positioned to cut correctly. In addition the entire weight of the cutter rests on the pipe. When started the blade chips the pipe surface rather than grinding it, producing a burr-free cut surface that is ready for installation. The operation is dust free and does not produce any sparks.

Each system comes supplied with its own pipe holders (except model V1000 which are an optional extra), pipe saw, allen keys, CD user manual and carry case.

Other features of these products include the ability to cut pipe at floor level, improved working environment and user safety including fire safety, increased productivity through extremely fast cutting speeds, light to use and pipes can be cut everywhere where electric power is available.

Exact Tools Oy – Finland
Website: www.exacttools.com

Diverse range of series-manufactured products

Modular pipework systems from Jacob

JACOB Pipework Systems has increased its range of series-manufactured and special products. The patented Jacob Earthing Bridge, with around 200,000 sales to date, is being complemented with a new model – the Universal Earthing Bridge.

This modification has an even wider field of application and replaces the earthing cable traditionally used for the electrostatic potential equalisation of pipe systems. Because the bridge is fixed to the Jacob pull-ring using simple screw-fixings, no welding work is required, even for retrofitting existing systems.

The diversity of additional abrasion protection systems and non-stick coatings is demonstrated by differently lined pipes and fittings. A wide variety of lining materials and thicknesses is available to suit the customer's requirements. Tried and tested PU linings or special brand-name linings with thicknesses of 2 to 8mm, which are used to line the inside of the pipes to maximise their service life, are a popular choice.

These can also be provided to food-grade standard, if required.

The new Jacob Hygiene Distributor is suited to applications where the requirement for frequent cleaning of the inner surfaces necessitates quick and easy disassembly and reassembly of the parts. The innovative design of the distributor allows this to be achieved even in its installed state. The entire shaft and flap components can be removed and refitted easily without using tools.

Fr Jacob Söhne GmbH & Co KG – Germany
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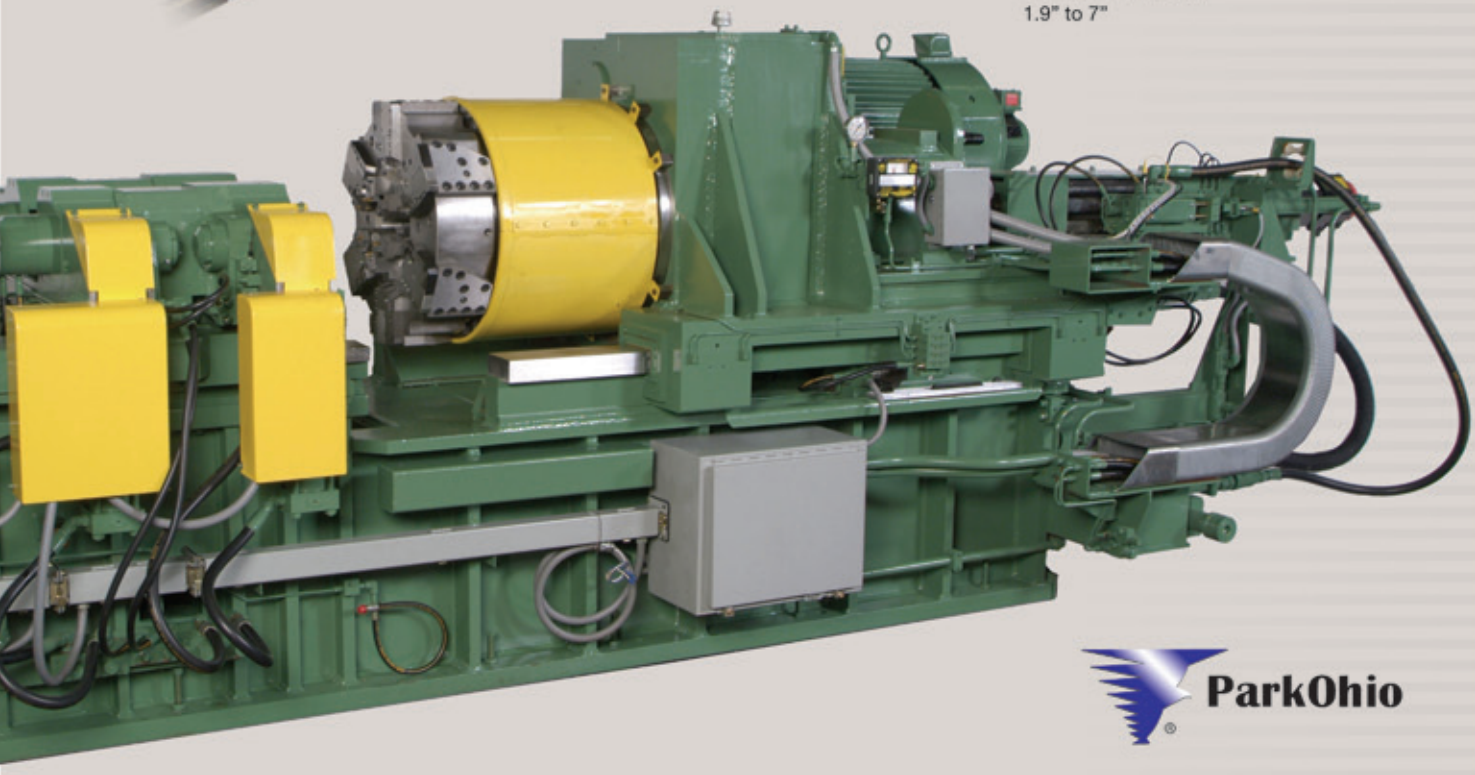

ParkOhio

www.pmc-colinet.com

Compact solution for angles and edges in stainless steel

FEIN has expanded its stainless steel range to include a powerful fillet weld grinder. The flat tool head can quickly and efficiently machine fillet welds on metal constructions without damaging neighbouring surfaces, even in acute angles. The Fein KS 10-38 E fillet weld grinder was developed to meet the requirements of niche metal workers, including specialist interior craftsmen, industrial tank constructors, and ship and vehicle builders.

Fillet welds occur automatically when two metal workpieces are welded together at an angle. Metalworkers have to grind these often difficult-to-reach spots, to satisfy customers' finish and corrosion resistance requirements. Fein has developed a solution for this application. With a head just 33mm long, the powerful fillet weld grinder reaches even very narrow fillet welds. The head can be smoothly swivelled through 180° and fixed to the neck of the machine without the need for tools, which shortens the overall length of the machine and makes even work on corners and work offset to the side possible. The spark hood can be adjusted or removed entirely for different working positions.

The Fein KS 10-38 E fillet weld grinder head can be swivelled without the need for tools

The grinder features an easy-maintenance belt tensioning system. The clamping fixture ensures optimum transfer of force and preserves the drive belt, while the patent-pending spindle lock allows fleece discs to be changed easily, without putting strain on the clamping belt.

For fast work progress, especially with long fillet welds, the fillet weld grinder features an 800W motor with permanent overload capacity. Double gear reduction delivers a very high torque, and the speed range can be electronically adjusted between 1,350 and 3,750rpm. Even when subjected to continuous use, neither the machine nor the head will overheat, allowing for safe working and avoiding unnecessary interruptions.

Fein offers hard-pressed fleece discs with a diameter of 150mm and thicknesses of 3 and 6mm.

Coarse fleece discs are suitable for descaling fillet welds and for removing scratches; medium discs smooth and grind fillet welds; fine discs harmonise contours, remove tarnishing and deliver a satin-finish; and very fine fleece discs prepare fillet welds for polishing. Fein can also supply profiling stones, to allow fleece discs to be given the right profile, and felt discs and polishing pastes.

With a high plunge depth and rotatable tool head, the grinder can be used on difficult-to-reach spots

The Fein stainless steel range consists of power tools and accessories tailored to the typical applications involved in machining stainless steel surfaces. It includes angle grinders, polishers and appropriate stainless steel accessory sets for surfaces, pipes, profiles, corners and edges. For grinding and polishing work on pipes and profiles, Fein offers belt grinders and pipe grinders. The Grit range of belt grinders is suitable for grinding in volume production.

The Fein fillet weld grinder is supplied in a plastic case with two medium and two fine fleece discs (one 3mm thick, the other 6mm thick) and one profiling stone, and is available from specialist dealers.

Fein Industrial Power Tools UK Ltd – UK
Email: sales@fein-uk.co.uk
Website: www.fein-uk.co.uk

Raw material for tubes

THE NB Norder Bandstahl GmbH is a supplier of raw material for tubes, wires, white goods, hose clips and profiles for the industry. NB supplies strip sheet and bars in all stainless and acid resistant qualities. It is one of the most modern service centres in Europe. For 30 years non-consolidated – but partner of all major stainless steel producers, with unique logistics and slitting capacity of more than 300 tonnes per shift.

Slit strip – whether single-layer or synchronously oscillated wound in up to 20 coils wound – specified sheets and bars – all in all current versions also surface treated in all grind and brush optical characteristics. Furthermore flat rolled edges fully round edges and sharp rolled edges are available. The company has 25 plants – 10 slitting lines with tool assembly robots and automatic separator systems, three of them as slit/winding lines.

NB Norder Bandstahl GmbH – Germany
Website: www.norderband.de

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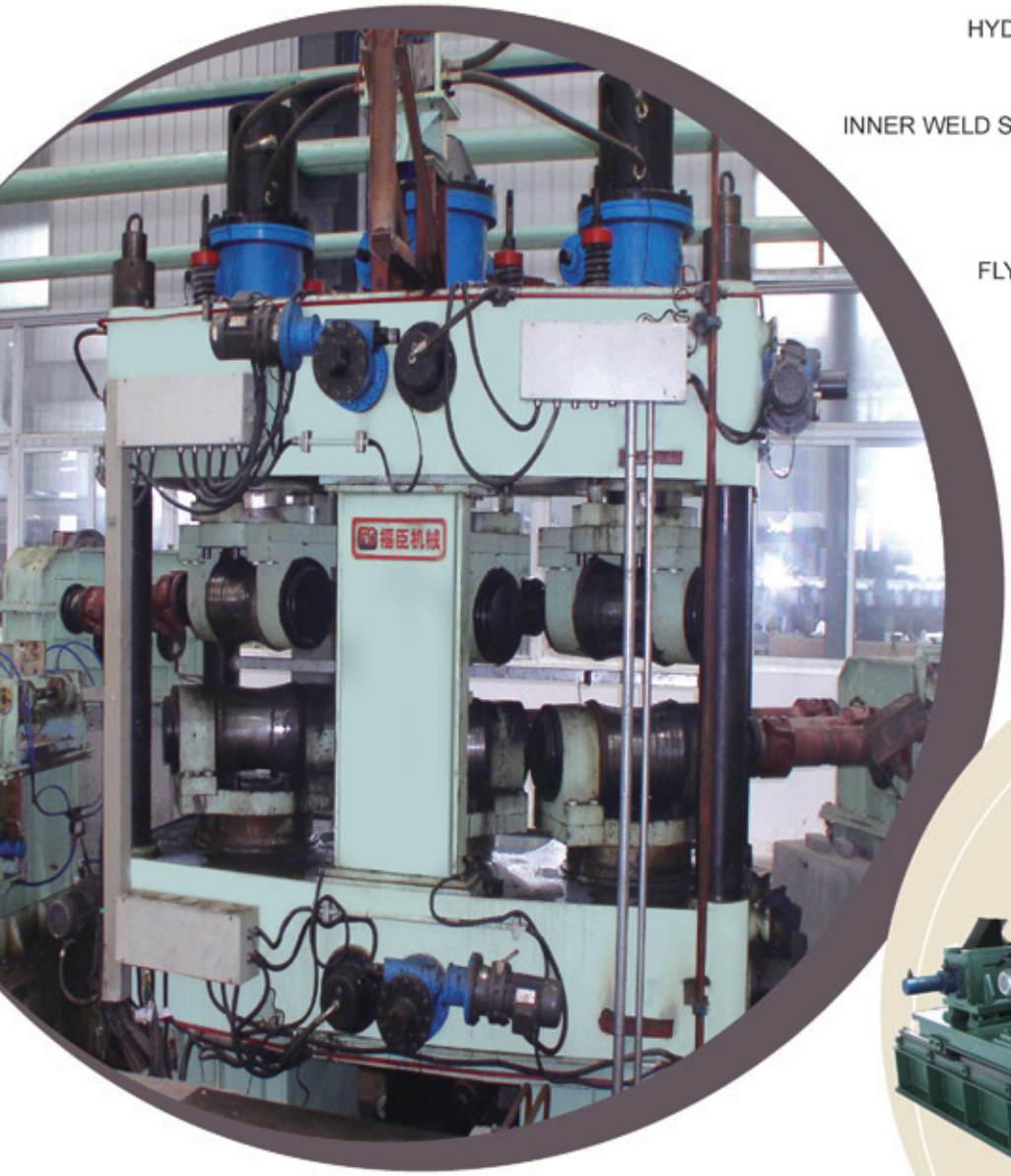

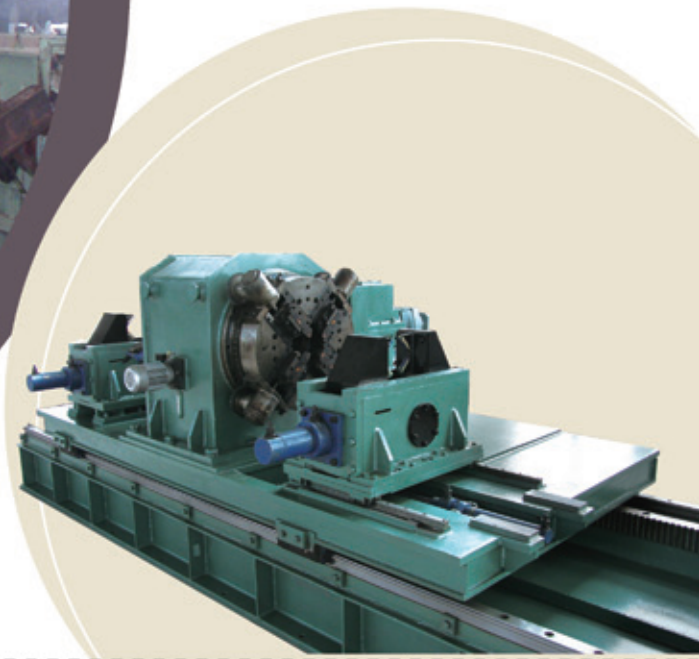

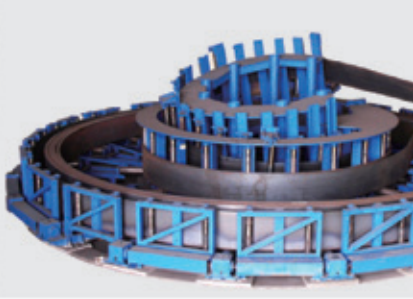

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New technologies for highly flexible roller shutter manufacture

Roller shutter slats machine 67

CUSTOMERS are increasingly less inclined toward mass produced products: instead they want products tailored to their wishes. Also, once they have decided to purchase, they do not want to wait a long time for the delivery of the products they require. If they are not satisfied, these customers are lost just as quickly as they may have been won. This statement also applies to roller shutter manufacture. Manufacturers who design their production to meet these demands will have an advantage in the competition for customers.

It is not always as easy to keep the related increasing costs under control. At R + T in Stuttgart, Dreistern is presenting a new manufacturing concept for roller shutter slats and roller shutter boxes that could provide assistance on this aspect. In both cases the concepts are highly flexible manufacturing solutions that permit the cost-effective manufacture of the smallest batch sizes due to very short setup times on a product change.

Up to now a product change could easily take two hours or even longer on machines for roller shutter slats. Many manufacturers do not therefore change tools at all; instead they produce different products on different machines. However, the number product variant is then limited to the number of machines available. This situation is often inadequate to be able to react flexibly to customer wishes. With a new system the effort for a complete product change can be reduced to a quarter (less than 30 minutes). The welcome aspect here is that, as a rule, old machines can also be upgraded with the new system.

This is not the only improvement related to the new roll forming system. Tools on modern roll forming machines for the manufacture of foam filled roller shutters have numerous adjustment features. The tool manufacturers utilise these features to perfectly trim a new tool to the highest quality.

In day-to-day production only a few adjustment features are necessary to compensate for occasional material fluctuations.

In the worst case the product quality may even be degraded if, for instance, a machine operator makes the wrong setting due to a lack of specialist knowledge. This situation is now to be a thing of the past. The new generation of Dreistern tools only have those adjustment features that are actually necessary in day-to-day production. Experience from other sectors shows that with this step the amount of scrap can be reduced by at least 30 per cent.

The great versatility of the new system concept is not at the expense of productivity. The setup time in case of product change is in the area of a few minutes. Every 40 seconds a complete roller shutter box leaves the machine, so impatient customers do not need to wait long for their new “designer roller shutter box”.

The roller shutter manufacturer also has reason to be pleased. Thanks to the extraordinary productivity of the complete system, there is no need to fear a loss of cost-effectiveness even with extreme product variety.

Dreistern GmbH & Co KG – Germany
Website: www.dreistern.com

Cost effective tube and pipe coatings

ONE common cost-cutting measure is to look for cheaper products. Looking for the great deal is human nature, but experience shows that not all products are created equal and lower cost products may not prove to be such a good deal in the end – fraught with hidden costs.

Before purchasing a coating, it is important to look for the best value, beyond just the per unit cost. Identify all potential hidden costs that might be incurred with a lower cost product. To establish true "total cost," a product-to-product comparison should include such questions as: how much area can the coating cover effectively? Using greater quantities of coating to adequately cover products can quickly erode "savings".

How is the coating applied? If your equipment requires alteration or replacement to apply the coating, additional expenses will result – including down time and extra clean-up – rather than cost savings.

How well does the coating comply with safety and government regulations? Some coatings contain higher levels of VOCs (Volatile Organic Compounds) than others and some may contain HAPs (Hazardous Air Pollutants). Protecting employees from these hazards and any excess waste production can tack on more expenses to the process.

How long will the coating last, and how effectively does it protect the surface from corrosion? What degree of handling can the coating withstand? Does the coating provide protection for products that are stored outdoors? Coatings that don't effectively protect products can damage a company's reputation. If business is lost because customers return product or go elsewhere for products with better corrosion protection, a bargain coating may not be a bargain for the company at all.

Unveiling all the hidden costs and establishing "total cost" is not always straightforward. So, it is important to seek out a coatings provider with specialised expertise that can provide informed assistance.

A coatings expert – someone who has years of experience consistently working with coating applications – can be a useful resource. Not only can they lend support to achieve lower costs, but also uncover ways to improve total coatings operations – leading to better results and bottom-line savings. Quaker Chemical Corporation is an expert in tube and pipe coatings. Quaker offers its customers valuable coatings and solutions. Any product recommendations are based on individual customer operations, equipment, budget, and everything needed to deliver their products in the most efficient and cost-effective way possible. "Cheaper up front, costly in the end" can be a tough lesson learned.

Working with a large global pipe manufacturer, Quaker recommended that the customer switch to a new coating to achieve a faster drying time. While the coating itself cost more per unit than what they had been using, the reduction in drying time, and other process improvements, provided the customer with a total savings of 63%. In addition, the pipes shipped out faster – giving the Quaker customer a competitive edge.

Quaker Chemical Corporation is a leading global provider of process chemicals, chemical specialities, services, and technical expertise to a wide range of industries – including steel, aluminium, automotive, mining, aerospace, tube and pipe, coatings, and construction materials. Quaker's products, technical solutions, and chemical management services enhance customers' processes, improve their product quality, and lower costs. Quaker's headquarters is located near Philadelphia in Conshohocken, Pennsylvania, USA.

Quaker Chemical Corporation – USA
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Website: www.quakerchem.com

The Hold-E pipe clamp

Hold-E pipe clamp

SUMNER Manufacturing has launched the Hold-E pipe clamp for securing pipe ¾" to 6" in diameter to standard vee head pipe stands. The Hold-E is a steel frame clamp and utilises a quick release button that allows the welder to open and close the gripping arms in seconds.

The Hold-E clamp is designed specifically for holding pipe during flange fit-up, short pipe lengths or when fabricating pipe with branches. It can also be used with fittings clamped to vee heads for fit-up work. Operation of the Hold-E is designed to be quick and simple. Pressing the quick-release button allows a ram weldment to adjust to the opened or closed position quickly. After positioning the ram, a few turns on the feed screw secures pipe or tubing to the jack stand in an instant. No special adjustments are required to accommodate ¾" to 6" (19 to 150mm) pipe.

The compact tool, which has had US and international patent applications filed, measures in the stored position 10.31" W x 2.12" D x 15.75" H (261 x 54 x 400mm), and weighs 8.7lb.

Founded in 1965 in Houston, Texas, Sumner Manufacturing has served the welding and mechanical contracting industry for nearly a half century, creating material lifts, jack stands, pipe fit-up clamps, welding tools and material carts that are currently in use in more than 50 countries around the world, and in numerous industries. The company maintains offices in the USA, Canada, China, the UK and the Netherlands.

Sumner Manufacturing Co, Inc – USA
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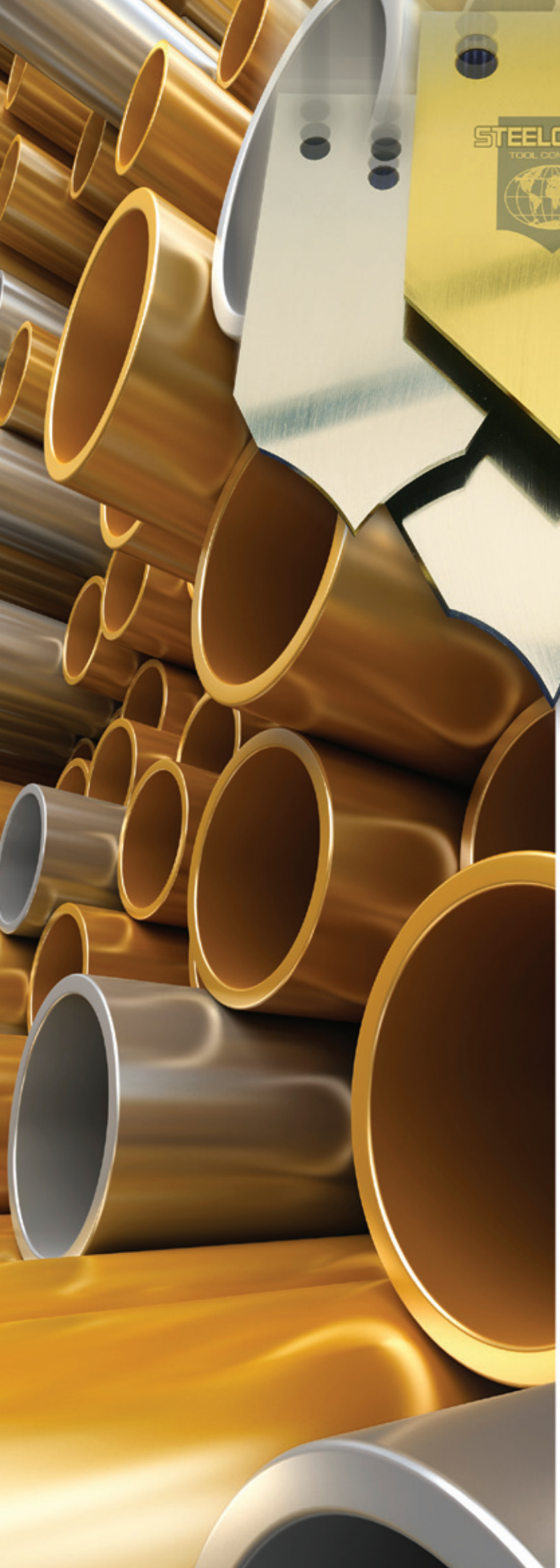

Don't settle for less cuts than what you should be getting.

Don't be fooled by cheap imitation cut-off blades from other suppliers that underperform and can ruin your production runs. For over 70 years, Steelcraft Tool Company has revolutionized cut-off blades for the tube and pipe industry. Count on Steelcraft Tool Company for the best products, with the best service, at the best value.

STEELCRAFT
TOOL COMPANY

We've been making cut-off blades better and longer than any one else in the industry.

call **+1.734.522.7130** *visit* **www.steelcrafttool.com**
fax **+1.734.522.1134** *email* **STCTOOL@aol.com**

All-in-one pipe-bending machine

SIMAT has launched Levitate, a patented machine that can bend up to 35mm diameter tubes directly from coil. It can also make curve radii of less than 1.5 times diameter.

The Levitate core consists of a steel rod that is not mechanically fixed to the machine structure, but can maintain the straight position thanks to a powerful magnetic field, so both ends of the core are free. This mechanism allows continuous coil feeding.

The Levitate production cycle phases are: loading of the coil on payoff reel; introduction of the tube; bending of the tube, which is still tied to the coil; and final cutting of the bent tube by orbital welding or blade.

With Levitate it is possible to obtain long lengths and small bending radii, implementing tubes of large diameter. The system can also offer advantages in the saving of manpower as well as feedstock. It can also be integrated with other automation parts, such as shaping machines.

SIMAT machines are strictly controlled before being sold, and they respect all official standards and rules. Installation and testing take place directly at the customer's location by SIMAT technicians.

Operators learn how to use the machine directly from the SIMAT technicians, who also give online and just-in-time assistance. Spare parts can be easily and quickly ordered.

SIMAT Srl – Italy
Email: sales@simatautomation.com
Website: www.simatautomation.com

New weld purge monitor

Huntingdon Fusion Techniques has introduced a new dedicated Weld Purge Monitor. Having developed the models MKI to MKV in a particular style, the company has embraced advanced technology to create a new instrument, designated PurgEye™100, that offers significant advances over previous models.

Features include integrated auto-calibration, requiring just the press of a button to calibrate both at ambient and at the lowest oxygen reading, and providing instant calibration at 0.01% O_2. It also removes the need for monitors to be returned to the factory for yearly calibration.

Using a tripod mount, the monitors can be located securely in an accessible viewing position without having to resort to additional clamping fixtures.

The PurgEye 100 has an algorithm in the software to correct the reading at low oxygen levels, to ensure accuracy and repeatability of readings. Most low cost oxygen monitors are made for oxygen measurement at breathing levels for personal safety, rather than welding, and they are unable to read accurately as oxygen levels fall below the atmospheric reading of 20.94%.

When the battery life is too low to provide sufficient power to run the PurgEye100 correctly, a battery symbol appears on the screen to warn the operator to change the battery. Similarly, a sensor symbol will appear on-screen to alert the operator to change the oxygen sensor.

Huntingdon Fusion Techniques Limited – UK
Email: hft@huntingdonfusion.com
Website: www.huntingdonfusion.com

Sheet metal working lines

FASPAR SpA is a machine builder in the Milan area of Italy. Formerly a producer of presses, since 1977 the company has manufactured complete sheet metal working lines.

Slitting line for mild/carbon steel (installed in Ukraine)

With a 4,000m^2 covered production area, FASPAR's main products include slitting lines; levelling, straightening and cut-to-length lines (with rotary, flying and mechanical shear); surface finishing lines; feeding and pressing/punching lines; tension/stretch levelling lines; roll forming lines; and sandwich panel lines.

Processed material can be mild/carbon steel, galvanised steel, pre-painted steel, stainless steel, aluminium, titanium or copper.

FASPAR's customised products serve steel service centres, automotive industry, white goods industry and construction industry.

The company is a supplier to international groups such as ThyssenKrupp Group, Sassoli Group, Sandvik, Metecno Group, Ugine & Alz (Arcelor Group), Acesita, and other important service centres worldwide.

Over 300 FASPAR machines are used in Italy, Europe, Russia, Asia, North and South Americas and Africa by a wide range of users.

FASPAR SpA – Italy
Fax: +39 02 9471611
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Continuous casting machines offer flexibility

INDUTHERM continuous casting machines are designed to help save production costs and improve production flexibility. Tubes, strips or wires can be produced within minutes, in every required size and in any alloy.

The company states that its continuous casting systems are the only ones on the market with an optional vacuum function. With these machines, melting can take place under vacuum or inert gas atmosphere. This is suitable for all alloys containing copper such as brass, bronze, silver or red gold, as these materials tend to oxidise easily.

Degasification under vacuum results in an improved semi-finished product, because of the absence of oxidisation.

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– Germany
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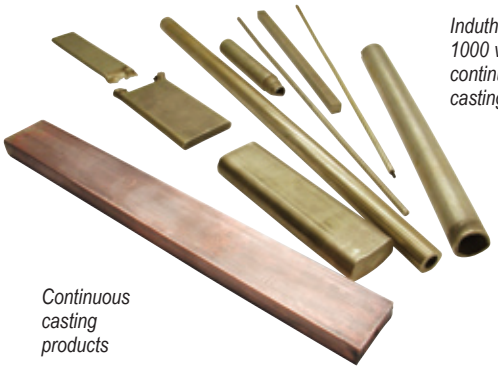
Website: www.indutherm.de



Continuous casting products

Indutherm VCC 1000 vacuum continuous casting machine

Mechanical surface treatment of stainless steel

IF the properties of an engineering material are to be fully utilised, the processor must target a suitable surface quality. Determining the grain size of an abrasive is only one of several performance specifications. If a particular surface has to be observed the recommended procedure is to manufacture a sample.

Verbal (qualitative) definitions and numeric (quantitative) data such as the Ra value for surface roughness alone cannot adequately describe a surface condition of stainless steel. With respect to surface treatment, the suitable choice of engineering materials is also important, in particular when smooth, high-gloss surfaces are the target.

In a number of countries and market segments titanium alloy stainless steels are used in lieu of low-carbon varieties when greater resistance is required against intercrystalline corrosion at the welds. Titanium alloy steels are unsuitable for decorative surface treatment, as the titanium content causes smearing when ground.

Descriptions of surface qualities often make use of terms like grinding and polishing. In order to ensure that the targeted surface quality is actually obtained, the principal and the agent must reach a clear and unambiguous agreement as to what the final result looks like and how it is reached. Grinding and polishing are forms of mechanical treatment that remove material. This process is effected with hard particles that are bonded firmly to each other or to a substrate. The surface effect depends on many factors, in particular the grain size and the type of abrasive. The term 'grinding' is used when undesirable surface layers, eg welding beads and tarnish, are removed. The term 'polishing' describes a decorative treatment that removes only little material.

Unlike grinding and polishing, buffing is not designed to remove material from a stainless steel surface to any significant degree. It is a levelling process that makes the surface smoother and glossier. Pastes, liquids and even solid polishing agents can be used.

Just like grinding and polishing, brushing too is a surface treatment process that removes material. The terms 'brushing' and 'polishing' are often confused. Brushing uses milder abrasives, and its purpose essentially consists in giving the surface a structure, and not in removing metal.

On stainless steel, the look and surface quality of mechanically treated surfaces ultimately depend on many factors. These include: the type of abrasive used (substrate, grain size, form and hardness); the number of treatment steps; the machines used and their drives; the types of substrate (eg belt, disc, wheel) and their flexibility; and the relative speed and contact pressure.

The suitable choice of grinding method, equipment and agents depends on the material's initial state, the accessibility of the surface for treatment, and the desired result.

As an expert for mechanical surface treatment, Suhner can provide users with in-depth know-how. The company provides on-site consultancy free of charge as part of its demo services. The demo vehicles assigned to its specialists have all the usual machines, tools and abrasives on board, so the Suhner specialists can work on actual workpieces to present end-to-end solutions.

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High precision buttweld fittings for line pipe installation

THE construction of line pipes often require abrupt directional changes due to topographic changes in hilly terrain or any other unknown installation issues during the construction in populated areas and cities.

Another challenge in line pipe maintenance are repairs where an elbow must be fitted to the existing pipeline segment in the shortest time possible. Thus, field segmentation of elbows is often necessary and part of normal field segmentation practice.

In the case of typical segmentable elbows, common standards (eg MSS SP 75) refer to limitations regarding the out of roundness of an elbow with ±1 per cent. However, these limitations do not take into account the tolerances of the nominal diameter of the pipes and the fittings. Using a new high precision mandrel forming method, Erne Fittings provides elbows, guaranteeing optimum nominal diameters together with tightest tolerances via the whole body of the fittings after cutting with conventional methods in the field.

This enables the field segmentation of elbows during the installation of line pipes with minimum misalignment between pipe and fitting and thus, a convenient way to carry out all welding operations without any adjustments of the bevel ends prior to welding. Moreover, the use of pups (small adapter pipes) which are usually used to enable back welding, is not necessary, since the root layer can be welded in high quality from outside only due to the small misalignment of the root face. The use of these segmentable elbows reduces the necessary number of such pups in line pipes and hence the number of circumferential welds as well as the time for adjustments prior to welding. This increases the efficiency during line pipe construction and substantially reduces construction time and costs.

Erne Fittings GmbH – Austria
Email: office@ernefittings.com
Website: www.ernefittings.com

Lift for mechanical contractors

SUMNER Manufacturing has introduced the compact 2416 Contractor Lift for mechanical contractors to quickly and easily move loads of 200kg (450lb) up to 5.1m (17ft) vertically with forks reversed. The 2416 extends upon Sumner's 2412 Contractor Lift, but adds an extra mast and stabiliser legs, enabling users to lift more weight higher.

"The 2416 lift is perfect for any mechanical contractor looking for a compact, portable lift intended for one-man use on the job site," stated national sales manager, Brendan Conway. "It easily fits in most vans, SUVs and truck beds. Like all Sumner lifts, the 2416 has an inside-mast cable feed to keep cable out of the operator's face, and pulley guards that prevent load cables from coming off during transport."

The 2416 utilises four mast sections that extend or lower as the user cranks the lift winch and, like the 2412 Contractor Lift, a reversible fork that can be fitted with optional fork extensions, pipe cradles or a 24" x 28" steel tray. The 2416 features a double-handle at the top of the lift for easy manoeuvrability and casters that swivel independently for multi-directional positioning. Winch handles are detachable and wheels are positioned behind the winch assembly and at the bottom of the unit to enable laying the lift down and easily wheeling it into a vehicle.

Both lift legs and stabiliser legs reposition and lock into place for compact storage. Plunger pins are used with the front leg lock mechanisms and forks, eliminating extra hardware that can easily be lost. Lockable front casters keep the lift stationary while in use.

The 2416 weighs only 110.2kg (243lb) and has a stowed height of 159cm (62¾").

The maximum footprint with stabiliser legs extended is 122 x 140cm (48" x 55¼"). With front and stabiliser legs in stowed position the footprint reduces to 58 x 67cm (23" x 26⅜").

Founded in 1965, Sumner Manufacturing has served the welding and mechanical contracting industry for nearly a half century, creating material lifts, jack stands, pipe fit-up clamps, welding tools and material carts that are currently used in more than 50 countries around the world, in numerous industries.

Sumner Manufacturing Co, Inc – USA
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System solutions for manufacturing large diameter pipelines

Pipelines connect the world – produced with system solutions from Schuler for large pipe manufacturing. They cover long distances: through unforgiving landscapes, hostile weather conditions and the most extreme environments. And they transport the things needed for living in today's world: crude oil and natural gas, petrochemicals as well as drinking water.

The global demand of large diameter pipes for transport pipelines is growing. Harsh environmental conditions and remote on-shore and off-shore locations are imposing demanding requirements on future pipeline projects. Low temperatures and high external pressures in deep water impose enormous strain on the pipes. At the same time, there is a trend towards higher internal pressures for greater transport capacity.

Schuler presents system solutions for both longitudinally welded as well as large diameter spiral welded pipes. When it comes to manufacturing longitudinally welded large pipes, Schuler's hydraulic presses apply two different methods: U-canning presses and O-presses find their use in system solutions for the UOE process, C-presses and J step forming presses offer system solutions for the step forming process.

Schuler designs and implements turnkey production plants to manufacture large diameter spiral welded pipes. Schuler spiral pipe welding plants are designed in two different variations: In the online process, pipe forming is directly followed by submerged arc welding; whereas in the offline process it is followed by tack welding. Then, on separate welding stands, the submerged arc welding is performed.

In addition, Schuler offers manufacturing solutions for the production of lined pipes used for the transport of aggressive or sensitive liquids.

Schuler supplies machines, production lines, dies, process know-how and services for the entire metal-working industry. Its clients include car manufacturers and their suppliers, as well as companies in the forging, household equipment and electrical industry. The company employs around 5,200 people and is represented by its own facilities and sales offices in forty nations around the world.

Schuler – Germany
Email: pr@schulergroup.com
Website: www.schulergroup.com

Quick trim flap discs reduce labour and material costs

NORTON, an abrasives manufacturer and leader in metal fabrication abrasive products for over 125 years, has introduced two new Norton Quick Trim Flap Discs for the metal fabricating industry.

The SG Blaze® R980P and TwinStar Quick Trim Flap Discs feature a new flexible, easily-trimmed plastic back plate, allowing full use of the flaps.

The plastic backing can be easily trimmed back to expose the flaps for extended product life. This reduces materials costs by allowing 100 per cent of the abrasive material to be consumed.

The Quick Trim Norton SG Blaze R980P Type 27 flap discs feature the latest-generation ceramic alumina abrasive grain and an improved supersize grinding aid to provide 50-200 per cent longer life than any flap disc on stainless steel, cobalt, chrome, Inconel, titanium and other hard-to-grind materials that is currently available on the market. Blaze R980P Quick Trim flap discs offer the highest productivity and lowest total grinding cost.

The advanced supersize grinding lubricant also provides faster and cooler cutting for improved part finish and integrity.

Durable, Y-weight polyester flaps significantly improve product life, grain retention and fray resistance. Discs in 4½", 5" and 7" inch sizes are also available with ⅝"-11 hubs for quick disc changes and less downtime.

Norton Quick Trim TwinStar Type 27 flap discs are engineered for light stock removal, blending and finishing all in one application. They offer excellent performance and efficiencies on mild carbon steel, ferrous metals and cast iron applications. Higher-performance abrasive flaps are mounted on the new, easy-to-trim plastic back plate for full use of each flap. Discs in 4½", 5" and 7" inch sizes are also available with ⅝"-11 hubs for quick disc changes and less downtime.

Mr David Long, director of marketing, strategy and marketing information at Saint-Gobain Abrasives, said: "The brand new quick trim flap discs fall within the best tier of our current product offerings and are, as far as we know, unmatched in the industry for providing the best performance at the lowest total cost for the application."

Norton Saint-Gobain – USA
Email: david.j.long@saint-gobain.com
Website: www.nortonabrasives.com

Fin-fan assembly

POWER Fin Technologies has introduced a fin-fan 'matrix' system. The company claims its new fin-fan matrix construction is the fastest production machine in the world.

The product consists of multiple fins ('modules') placed in packs and swaged onto multiple tube nests 25-50 tubes wide x 12m long, whilst maintaining perfect fin spacing, ending up with a 'cellular' damage proof fin-fan unit. Available 'add-ons' include fin spacing, choice of any fin or tube materials (titanium, all stainless grades, carbon steel, non-ferrous), as well as any tube wall from 0.4mm upwards and fin thickness of 0.1 to 0.4mm.

Manufacturing time, it is claimed, is more than halved due to the matrix application.

Power Fin Technologies Ltd – UK
Email: info@powerfin.co.uk
Website: www.powerfin.co.uk

On/off multi-angle welding square and ground

INDUSTRIAL Magnetics Inc has added a new product to its line of welding magnets that is a combination, multi-angle welding square and ground all in one.

IMI's new, on/off multi-angle welding square and ground, featuring Magswitch® technology, is ideal for welders that need fast set-up, accurate holding and precise placement of steel sheet stock, plate and tubing.

This permanent magnetic, multi-purpose tool offers welders six common welding angles; 45°,176°, 75°, 90°, 105° & 135°, plus a 300 AMP welding ground and is heat resistant up to 180°F (82°C).

Easy to use, the welder simply places the square against the work pieces in the desired holding position and turns the handle to the "on" position, activating the magnet. Turning the magnet to the "off" position releases its hold and keeps it free from metal chips and shavings during non-use.

Industrial Magnetics – USA
Website: www.magnetics.com

Roll forming technology from Japan

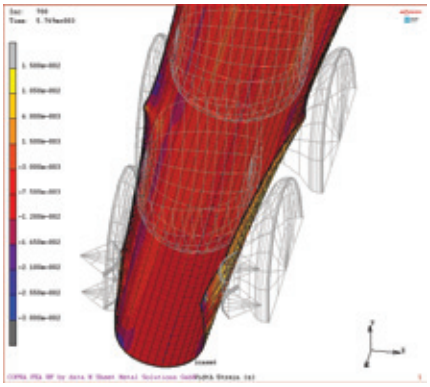
Sanyo Seiki Co, Ltd is a forming roll maker from Japan, and is expanding its business globally under the slogan "Technology, from here to the world".

The company started to perform roll forming analysis using FEM simulation software in 2007. This shows how the forming will be carried out by each stand, and visualises various forming defects such as edge wave (which mostly occurs when forming thin-walled pipe), torsion, camber and cutting deformation for open profile. Using this method, the company can devise countermeasures without carrying out actual forming.

In 2009 Sanyo Seiki received a technical development award from JSTP (Japan Society for Technology of Plasticity), with the technology of the Partial Step Forming method.

This technology is a means of suppressing work-hardening very little while forming electric resistance welded pipe. In the past, pipe that needs tough secondary processing, such as automobile mufflers, had to be annealed to put off strain inside the pipe. This technology acquired a good reputation because it enabled removal of the annealing operation and achieved cost cutting.

The company won a major contract from Vyksa Steel Works of Russia last year, receiving an order for fabricating 1,492 rolls, with a total material weight amounting to 1,267 tons. Fabrication started in April and finished in December.



Sanyo Seiki makes use of FEM analysis techniques

Sanyo Seiki participated at the Tube show in Düsseldorf in March.

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Entry-level CNC plasma cutting tables

A NEW range of UK-made CNC plasma cutting tables has been launched to offer a low-cost option for accurately cutting metals to virtually any 2D shape.

Swift-Cut Automation has launched its 44 Table and the larger 84 Table, which both use the industry-acclaimed Hypertherm Powermax range of plasma power sources to cut metals up to 19mm thick with a high degree of accuracy.

The 44 Table has a cutting area of 1,250mm x 1,250mm, while the 84 Table has a cutting area of 2,500mm x 1,250mm. Each machine comes completely assembled, ready to cut, with the Hypertherm Powermax 45 with machine torch as standard, and larger power sources are also available. A PC preloaded with CAD/CAM and CNC control software and on-site training is also included. Optional extras include a water table to reduce fumes and a pendant control for 'at the machine' accurate positioning.

Swift-Cut identified the demand for a lower-priced CNC plasma cutting machine for companies who have a need for automated cutting but cannot justify making a capital purchase investment of £30,000+. The new tables were the idea of Swift-Cut managing director Alan Swift, who runs a Staffordshire engineering business. His company had an ever-increasing requirement for prototypes and short runs of metal cutting, so he set about designing his own table rather than making the capital investment required for one of the existing popular industrial cutting systems.

The Swift-Cut 84 Table

"I'd developed the table for use in our facilities for short but frequent cutting runs, and one day a visitor asked where he could buy one," explained Mr Swift.

"This led to the second generation 44 and 84 machines, which Hypertherm were happy to support with their Powermax plasma source units. The feedback has been fantastic and we have already developed a UK network of distributors, some of whom have already acquired machines in order to have an in-house facility to demonstrate cutting to their own customer base."

Details of all the UK distributors can be found at the Swift-Cut website.

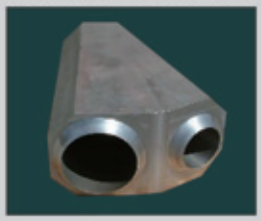
Swift-Cut Automation Ltd – UK
Fax: +44 1543 473443
Email: sales@vantageone.co.uk
Website: www.cncplasma.co.uk

HEBEI WENLONG PIPELINE EQUIPMENT CO.,LTD

PRODUCT RANGE:	MATERIALS:	STANDARD:
ELBOWS--LR 45DEGREE,90DEGREE RETURN BENDS--LR SR 180 DEGREE TEES:STRAIGHT AND REDUCING REDUCERS--CON &ECCENTRIC SEAMLESS FITTINGS DIMENSIONS:1/2"--40" SEAM WELDING FITTINGS DIMENSIONS: 26"--96"	A234-WPB,WPC,WP1,WP5,WP9,WP11,WP12,WP22,WP91, A860-WPHY42,WPHY52,WPHY60,WPHY65,WPHY70,WPHY80 A420-WPL3,WPL6,WPL9,WPL8 A403-WP304L,WP304,WP304H,WP316,WP316L,WP316H	ANSI B16.9,ANSI B16.28,MSS-SP-75 DIN2605-1,DIN2616-2,DIN2615-1,DIN2615-2 DIN2616-1,DIN2616-2 EN10253-1,EN10253-2







Hebei Wenlong Pipeline Equipment Co.,Ltd

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Alibaba account ID: wenlongpe

website:www.tenghaope.cn http://tenghao.en.alibaba.com

Bending to the right and to the left without reclamping

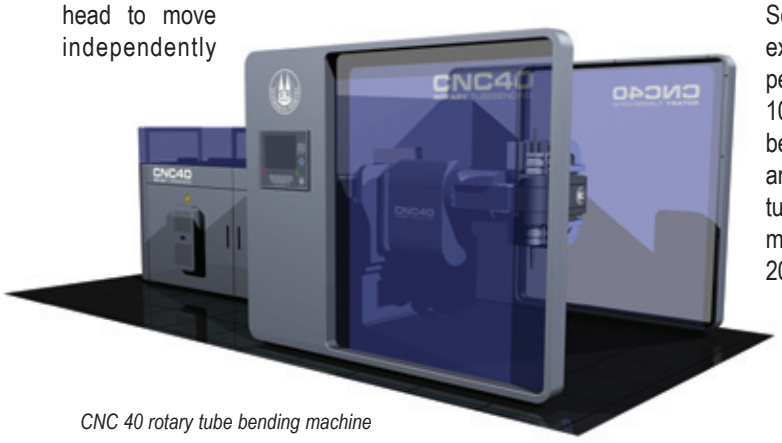
AS the first supplier on the international market for tube bending machines, with the newly developed CNC 40 Rotary, Schwarze-Robitec GmbH offers a CNC-controlled, tube cold bending machine for bending tube systems to the left and to the right. This is facilitated by an additional CNC axis from the loosely mounted bend former in the innovative bending head.

The CNC 40 Rotary considerably increases the flexibility of bending processes – even in the case of tubes with shapes already preformed on the straight tube and in the case of additional functions such as the filling mandrel device. It processes tubes with diameters from 8mm to 40mm.

Schwarze-Robitec has developed the current solution in order to allow time and cost effective processing by users in the future. "Put simply, the use of the loosely mounted bend former allows the bending head to move independently of the tool," said Schwarze-Robitec GmbH manager Bert Zorn. The advantage of this is that even tubes with the smallest bending radii and complex curve shapes after bending can be easily moved out of the range of collisions and interfering contours.

As this new solution needs no second bending head, Schwarze-Robitec has been able to reduce the investment in the CNC 40 rotary by around 20 per cent when compared to conventional solutions, explains Schwarze-Robitec GmbH manager Hartmut Stöhr. Aside from these massive reductions of acquisition costs, the new tube bending machine, which works with up to 13 CNC-axes, is remarkable for its intuitive operator guidance on the control system. "A single day of initial practice is enough to understand the control concept and operate the machine intuitively," added Bert Zorn.

In addition to this new development, Schwarze-Robitec exhibited the high-performance CNC 100 E TB MR tube bending machine and the TPM-1 tube perforating machine at Tube 2012.



CNC 40 rotary tube bending machine

The fully electric CNC 100 E TB MR is suitable for bending tubes with diameters between 25mm and 114.3mm. This machine is also equipped with a loosely mounted bend former and with transport boost and multi-radius technology, which allow automated bending on several levels.

It also has a combined bending tool for mandrel bending with extra curve clamp jaws and a hydraulic separating unit. The advantage of this is that even tight radii and short intermediate lengths can be produced on one tube in a single operation. "Furthermore, the CNC 100 E TB MR is more energy efficient than comparable machines," Schwarze-Robitec sales manager Jürgen Korte claimed. Other advantages, such as the ergonomic loading height and the fully automated level changing, come into effect both with the CNC 100 E TB MR and with the CNC 40 Rotary.

The tube processing specialist from Cologne also showed the TPM-1 tube perforating machine, which punches entire rows of holes in tubes with a thickness of up to 2mm. The machine is able to process tubes up to 70mm in diameter and 500mm in length. It performs the processing stages of punching, perforating and cutting to length in one go.

Schwarze-Robitec GmbH – Germany
Email: sales@schwarze-robitec.com
Website: www.schwarze-robitec.com

Orbital welding carriage increases production

GULLCO'S Pipe Kat® automated pipe welding system with integrated wire feeder unit incorporates a 40 IPM welding carriage design with quick-action mounting for ease of installation.

The carriage is equipped with a high-speed return feature for faster repositioning of the carriage.

The Pipe Kat is equipped with a linear oscillator with adjustable weave width and weld joint centreline adjustment, and all electronic motorised functions incorporate jog settings. The system is supplied with a main control box with 7,620mm (25ft) umbilical, wire feed spool capacity of 4.5kg (10lb), with a maximum wire speed of 89-226cm/min (35-633 IPM) and a wire size range of 0.8 to 2mm. The welding torch uses standard consumables.

Gullco International Limited – Canada
Fax: +1 905 953 4138
Email: sales@gullco.com
Website: www.gullco.com

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Since September 2011 OTO S.p.A. has assumed the role of parent company containing three business units and one 100% owned subsidiary: OTO Mills manufacturing Tube Mills Lines, OTO Lift Trucks producing Forklift Trucks, OTO Steel, the Motteggiana plant, which produces welded structures and OTO Automation Srl the former Elletre S.r.L. of Sovizzo (VI) which is completely owned by OTO S.p.A.

With more than 300 employees, a total area of 85.000 square meters of which 36.000 square meters is covered, with products completely made in Italy, OTO S.p.A. continues to consolidate and develop its own know-how over time.
Transforming and adapting to the requirements of the market, OTO S.p.A. is offering itself to customers as a partner of great reliability, excellence and innovation with the aim of making history together.

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42022 Boretto (RE) Italy
www.otocompany.com

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www.otoautomation.com

Lightweight inverter welders

MinarcTig Evo 200MLP inverter welder

KEMPPI (UK) Ltd has launched the Minarc Evo range of lightweight inverter welders, which offer a choice of MMA, MIG/MAG and DC TIG welding equipment, and are easy to use and light to carry.

All the machines in the Minarc Evo range include power factor correction (PFC) technology for energy efficiency, delivering their maximum output current at 35% duty cycle from any single phase 230V, 16A industrial power network, and are fully compliant with the latest European EMC Harmonics Directive, IEC6000-3-12.

The welders are designed for professional industrial repair and maintenance work, including agricultural and horticultural applications, welder training colleges as well as DIY applications, and they can be used with generator power supplies, including extra long 100m+ extension cables, making them suitable for use both on the shop floor and on-site.

Minarc Evo 150 is an MMA/TIG machine rated 140A at 35% duty cycle for MMA welding and 150A at 35% duty cycle for TIG welding. It incorporates precise arc ignition, large voltage reserves and automatic arc dynamics control, making it suitable for welding with all electrode types, and it has a large LED meter display, remote current control option and lift TIG ignition.


MinarcMig Evo 200 inverter welder

MinarcMig Evo 200 is a MIG/MAG machine with a large welding capacity, and options include either automatic or manual mode set-up for precise weld quality and arc ignition, monitored and controlled by Kemppi's adaptive arc regulation system. Rated 200A at 35% duty cycle, it has a large LCD graphical interface for easy user set-up. The automatic mode enables the user to simply set the plate thickness and weld. Material selection includes ferrous, stainless steel, aluminium and CuSi filler wires, satisfying a wide variety of industrial applications.

New Minarc Evo series inverter welders

MinarcTig Evo 200 and MinarcTIG Evo 200MLP are two TIG/MMA machines with accurate and refined HF ignition plus the necessary control, power and work capacity to reliably complete a variety of professional TIG welding tasks. Rated 200A at 35% duty cycle for TIG welding and 170A at 35% duty cycle for MMA welding, they are a suitable DC TIG welding solution for light industrial manufacturing, installation, repair and maintenance applications. Functions include pre- and post-gas time control, current upslope and downslope time control and remote control options. The MLP version is equipped with the Minilog control and semi-automatic arc pulse function. MinarcTig Evo is a dual-process machine that also provides quality MMA welding for a range of DC electrode types.

Kemppi (UK) Ltd – UK
Fax: +44 845 6444202
Email: sales.uk@kemppi.com
Website: www.kemppi.com

www.mazak.eu

(PRODUCTIVITY)[M]

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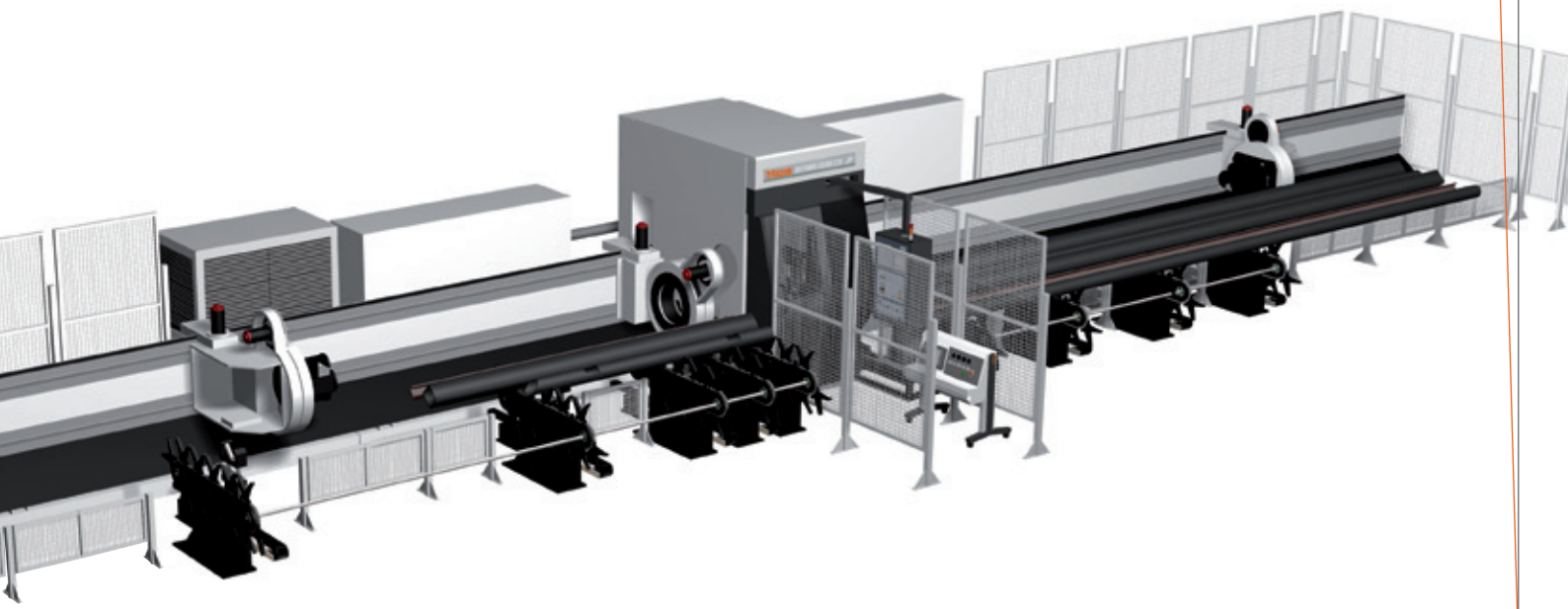

Mazak
Your Partner for Innovation

The Alpha 60 CNC-I

TAURING has created the first completely hydraulic bending machine to satisfy companies who need to create coils that can be used in the energy and in the water and other liquid treatment fields.

The Alpha 60 CNC-i model is part of the personalised machine range produced in Tauring's plant and that confirms the growing influence of the brand.

Dynamism, precision, reliability, sturdiness, versatility and ease of use are the guide lines that characterise the production of this latest generation of bending machines, based on a new construction philosophy that has received unanimous approval from the market.

In particular, after experience with the ALFA 50 CNC8/7 model – the precursor of the realisation of every coil with the execution of counter bends on the entry-exit shank, today the company is able to present the Alpha 60 CNC-I model, the brand new bending machine with straight guides that contains many technological innovations never used before on any other bending machine in the market.

The many machine control axes use interlock with brushless motors for contemporary and independent movement, managed by an interpolated numerical control.

Hydraulic bending machine

This technology allows a higher precision and repeatability on the coils, guaranteeing a greater speed in the execution of the production cycle with a meaningful reduction of the management costs and a relevant increase of the business profitability.

It is possible to realise coils of every length with constant or variable pitch, with different diameters, modifying the bending axis, with the execution of the shank counter bend at the beginning and at the end of the coil. This is possible thanks to the various CNCi functions, characterised by a simple and intuitive system of programming of every type of regular or irregular geometrical shape, simply by drawing it on the touch-screen monitor or importing it from a dxf file.

Tauring – Italy
Website: www.tauringroup.com

Provéa

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- *Cycle : tube clamping, water filling, pressure increase, maintain and decrease*
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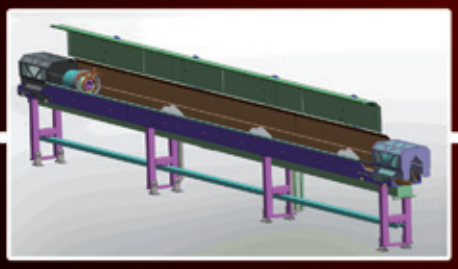
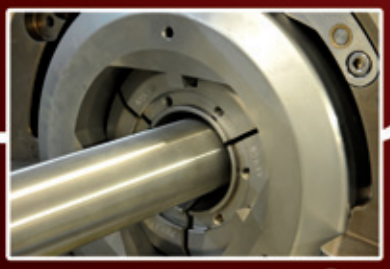
- *Design adapted to the exact demand (multiple heads, pressure, Ø tube range…)*





Provéa France

www.provea-machine-tube.com

Plasma annealing and cleaning for precision tubes

Plasmait supplies plasma heat and surface treatment lines

PLASMAIT GmbH, a supplier of plasma heat and surface treatment lines for wire, tube and strip production, has introduced a new PlasmaANNEALER for continuous annealing and cleaning of precision tubes.

PlasmaANNEALER has been designed for continuous heat treatment, degreasing and oxide removal of precision and thin wall tubes. PlasmaANNEALER can be used on a wide range of ferrous and non-ferrous materials with OD range between 0.1mm to 5mm. Thin-walled tubes with diameter up to 10mm can also be annealed with the new plasma process.

So far Plasmait has demonstrated successful annealing and surface cleaning on tubes of various materials including copper, copper alloy, stainless steel and nickel alloy tubes.

PlasmaANNEALER is equipped with a vacuum system to ensure controlled atmosphere and exceptionally low usage of purging gas. The plasma-heating zone is complemented with appropriate length dwell zone to allow for annealing of materials like stainless steel and nickel, that require extended time at temperature to achieve complete annealing.

According to Plasmait's R&D director, Peter Ziger, the dedicated tube trial facility is now available to all tube manufacturers who strive to improve the quality of their tubular products. Plasma treatment will benefit the applications with demanding surface quality requirements or challenging annealing requirements. Such applications are usually found in sectors such as medical, precision mechanical, electronics, aerospace and energy sectors.

The tube manufacturers who adopted plasma annealing have recognised the value from low cost of ownership in comparison to traditional tube or muffle furnace. The benefits of plasma treatment include more that 50 per cent lower energy use, 10 times lower purging gas consumption, the saving from dry, chemical-free degreasing and surface cleaning. Increased annealing speed by the factor of five or more results in fewer take ups and payoffs and lower cost of maintenance.

Manufacturers of coated tubular products may find plasma surface preparation prior to coating or metallic plating also an area of potential interest.

Since the introduction of plasma heat and surface treatment process in the wire industry in 2003 Plasmait continuously improved the process and widened the application scope to include annealing and surface treatment of tubes and flat products. With more than 52 deployments of plasma treatment lines worldwide Plasmait established itself as a trusted supplier to the wire and tube industry.

Plasmait GmbH – Germany
Fax: +44 7810 810 656
Email: info@plasmait.com
Website: www.plasmait.com

A new modular concept

AS a result of its modular design, the FLEX machine series from Escofier provides many application solutions for all kinds of cold rolling processes used with dies. The two sizes of machine base enable it to accommodate a large range of work pieces. The maximum rolling force of the cylinder (from 5 to 60t), the energy (electrical or hydraulic), the spindles sizes and the different solutions of motors assure precision when making all types of standard profiles, Incremental®, Syncroll®, roll-finishing of gears, densification of powered metal parts and tubes.

The main characteristics are: a cast iron base available in two sizes assures optimal rigidity; high accuracy of carriage movement due to the ground guides; two movable carriers are symmetrically moved by a single cylinder; spindles are rotated by reducers or direct drive shafts; the spindle diameter is adapted to the rolling dies and applications; movements are controlled by PLC, numerical axis or CNC; optional force control and position control systems for the gear finishing process; and optional easy taper and helix adjustment.

Escofier – France
Email: svandenabeele@escofier.com
Website: ww.escofier.com

An innovative tooling-change system for small batches

MILL-FLIP® has been developed by tube and tubular products manufacturer Bosal Group.

It cuts the time taken to set up tooling for new batches thanks to a novel pivoting baseplate that allows tools to be changed and prepared for the next batch while the current batch is running.

Mill-Flip is fully automatic and can cut the change-over cycle to just 60 seconds thanks to its unique 90° pivoting dual baseplate design.

As one tool-set is in operation, another tool-set can be prepared on the second baseplate. As the batch finishes, the first baseplate is swung out of the way and the second takes its place.

Mill-Flip is fully self-contained and autonomous. It does not require external lifting equipment or any operator involvement before, during or after each automatic change-over cycle. There are no rails or any raft movement on the front of the mill.

The concept was developed by Paul Vanleene, a manufacturing technology specialist at Bosal. He believes that Mill-Flip will appeal to small-batch manufacturers.

He said: "Specialist tube manufacturers often run small batches and so the changeover time is a major element of mill utilisation. Mill-Flip shortens and automates the changeover, making it quicker, cheaper and safer with minimal operator involvement."

Bosal, working with intellectual property specialist Scambia, is keen to license the technology, which is covered by numerous patents, to tube mill designers and builders. Tom Sütterlin from Scambia believes there are many opportunites.

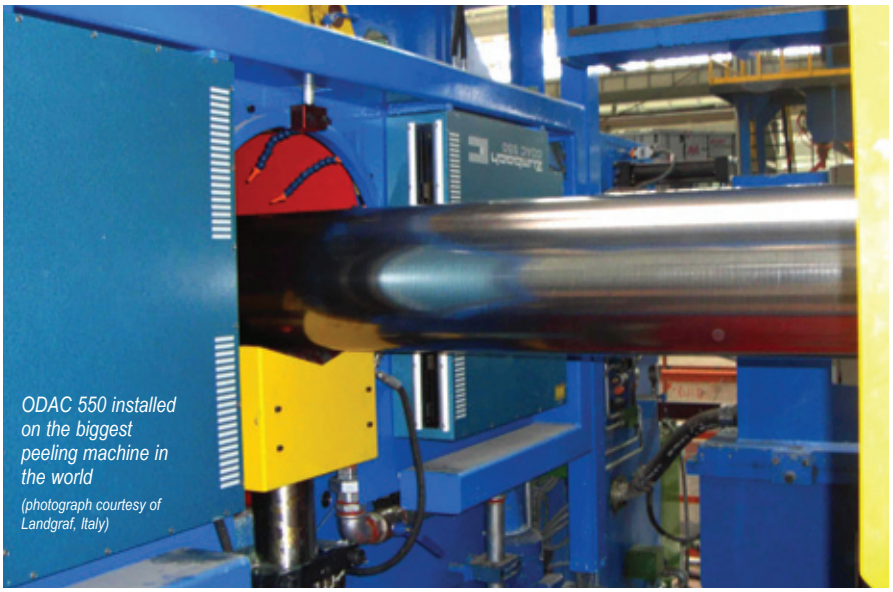
He said: "Mill-Flip could be a game-changer for tube mills, especially those producing small batches and short runs. We are already talking to a number of manufacturers about licensing agreements, technology transfer and pilot plant co-operation."

Bosal is one of the world's leading manufacturers of complete exhaust systems for passenger cars, catalytic converters, tow bar systems, complete exhaust systems for trucks and industrial applications, roof bars and roof racks, wind deflectors, jacks and toolkits, cabins, irrigation equipment, precision steel tubing and warehouse racking systems. The company has tube manufacturing facilities in Belgium, Spain, South Africa and the United Kingdom.

Scambia Industrial Developments AG – Switzerland
Website: www.scambia.ch

Large field scanners for diameter control in cold processes

ZUMBACH Electronic, Switzerland, has extended its range of ODAC® laser scanners for non-contact inline diameter measurement for large size solutions. With the ODAC 550 it is now possible to measure large steel bars, tubes and rolls up to 500mm or more at accuracies of a few metric microns and rates of up to 2,000 measurements/s. Other materials, such as titanium, brass, alloys and plastic, work as well.



ODAC 550 installed on the biggest peeling machine in the world
(photograph courtesy of Landgraf, Italy)

This was made possible by the development of a revolutionary optical scanning technique with a highly parallel and seamless measuring field (no dead zone). The technology also allows mounting emitter and receiver far apart from each other, depending on the available space conditions. Typical processes where the system offers new solutions are peeling, grinding, polishing and straightening, as well as in quality control lines (NDT).

The dimensional data for diameter, ovality, etc, can be fed directly to the user's network or displayed in real-time for the operator by USYS processors, and also for feedback to the machine. Complete accessories like secondary protection enclosures, cooling devices, air purging and air knives are available for heavy-duty environments.

Zumbach Electronic AG – Switzerland
Fax: +41 32 356 04 30
Email: sales@zumbach.ch
Website: www.zumbach.com

Automatic tube finishing machine ML100 3Z

ML100 3Z is a round pipe polishing machine with three independent abrasive stations. It finishes tubes from Ø10 up to 114mm in one single pass using a combination of different abrasive grains.

This machine is ideal for stainless steel tube finishing where high quality is demanded. In ML100 3Z not only round tubes can be polished, but also oval shapes. Due to ML planetary system the abrasive belts rotate around the tube giving flexible finishing without spinning the tube. This enables the safe work of long tubes and also of drilled tubes.

In order improve the tube supply autonomy of the machine NS has developed a new in-feed and out-feed system that makes continuous transport of tubes possible, avoiding labour costs and reducing non-productive periods of the machine. This tube finishing machine has an optimised program of tubes feeding, minimising the gaps between them and improving its global productivity.

This new system is able to feed and polish tubes with different lengths in the same sequence, working from a minimum tube length of 450mm. As the feeding is done from the front of the tube unlimited lengths can be worked with this tube finishing machine.

The standard capacity is designed for 10 tubes, but a higher number can be done with different versions of this loading and unloading tube system.

ML100 3Z brings a new energy-saving feature. This tube polishing machine is now equipped with a tube detection program, which automatically stops the abrasive belts motors every time there is no tube on the finishing stations. This automatic motor start and stop system reduces not only the consumption of energy, but also of bearings, rollers, V-belts and other mechanical components. This automatic tube feeding system is also compatible with double and single station tube finishing machines in dry or wet versions.

Ideal for different types of tube finishing businesses such as balustrades tube finishing, tubular stainless steel furniture finishing or finished stainless steel tubes wholesaling, ML100 3Z automatic conveyor system is applicable to every tube finishing activity where time, quality and machine autonomy are essential.

NS – Maquinas Industriais – Portugal
Email: info@nsmaquinas.pt
Website: www.nsmaquinas.pt

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Axxair orbital global process

FOR the past 15 years, Axxair has developed a global package proposal including orbital cutting, orbital bevelling and orbital welding machines. It is able to respond to the highest quality standards requested by industries such as aerospace, semiconductor, pharmaceutical but also lower rated standards such as in food and beverage where the price is an important issue.

With its new orbital power source SASL160, it is able to offer affordable systems starting at less than €15,000.

Such price categories allow quicker return on investment.

The technical capacity was not compromised and the SASL160 offers all necessary functions such as auto programming, printing of parameters, 200 programs stored on a flash card, real parameter acquisition, and step mode welding for example.

For industries such as chemical and petrochemical using thicker pipes, Axxair has launched the SASL300, which offers modularity with the full version integrating arc voltage control, oscillation control, cold wire control and efficient high capacity cooling allowing the use on tube to tube sheet production applications.

Being able to respond with the widest range of orbital cutting machines from 5 to 1,100mm in diameter combined with unique prefabrication machines as well as open heads and closed heads, Axxair has the capacity to manage the whole tubing process.

Therefore, it says it allows higher service proposal, better training capacities and less process interferences for higher return on investment.

Its patented orbital bevelling system allows prepping of pipes in seconds – the carbide tipped J heads are the ideal solution to prepare pipes to be orbitally welded.

This technical global approach would not be as efficient without a strong worldwide network of subsidiaries and partners that allows Axxair to be close to its customers in Asia and from its Korean Office, in Europe from its French headquarter, its German subsidiary and its Spanish office and in the USA through its future subsidiary in Texas.

In a quickly changing environment, service has to be a top priority – service means technical innovation to provide equipment with higher productivity, offering technical advice for sorting out the most appropriate solutions, reacting quickly with a complete range of machines being available on stock and offering high level training all around the world in more than five different languages.

Axxair – France
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Website: www.axxair.com

Chemcoater on coil-coating line

THE new chemcoater on coil-coating line 3 at the Siegerland location of ThyssenKrupp Steel Europe improves workflows on the coil-coating line, where paint and film coatings are applied to thin steel sheet, and actively contributes to protecting the environment.

The chemcoater is a piece of equipment used in the steel industry to apply chemical substances to galvanised flat carbon steel. These substances are water-based media with additives that pre-treat the steel and increase the corrosion protection of subsequent paint and film coatings. The chemcoater carries out chemical pre-treatment processes required for the subsequent painting process.

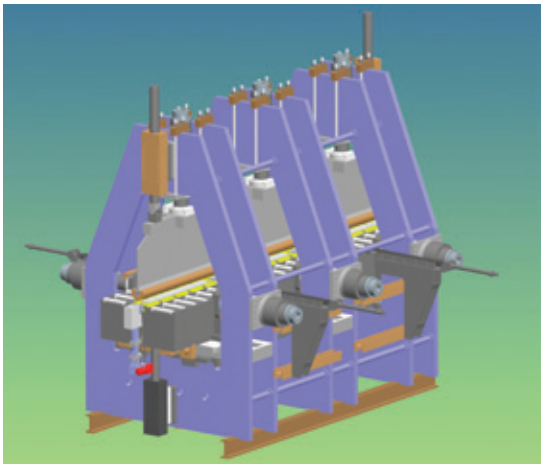
A total of three different chemicals can be applied to the sheet via rolls. The unit operates on the basis of a reuse process so that no wastewater is produced except in the subsequent rinsing operation. “This €6mn investment virtually eliminates the need for chromium-based corrosion-protection pre-treatments for organically coated parts,” commented team coordinator Ralf Wittkowski. “By using zinc-magnesium hot-dip coated starting material, we achieve better corrosion protection results with thinner zinc coatings. Water consumption is also reduced: by using two five-stage cascade rinses we have reduced the amount of water we need by 8,000 litres per hour.”

The planning phase for the extensive modernisation of coil-coating line 3 began three years ago, and the project was finally implemented last fiscal year. During the three-week shutdown when the chemcoater was installed, maintenance and cleaning work to ensure defect-free operation of the line was carried out.

The paint- and film-coated steel produced on coil-coating line 3 is supplied in the form of coil, slit strip and cut-to-length sheets for use in the construction, appliance, garage door and auto industries.

ThyssenKrupp Steel Europe AG – Germany
Website: www.thyssenkrupp-steel-europe.com

New U-press featured by energy efficiency



The new U-press is already the second press ordered from Siempelkamp in 2011 by Tenaris

At Tube 2012 in Düsseldorf, Siempelkamp presented presses for the complete manufacturing process of large-diameter pipes via C-, U- and O-forming. As a single-source systems provider, Siempelkamp not only offers the machine engineering, but also demonstrates the processing technology for all three applications.

Once more a new order of a long standing customer proves that Siempelkamp has set the right course with it's C-, U- and O-forming presses. Tenaris Confab ordered an 18-MN U-press for the works in Pindamonhangaba, Brazil. It will go on line together with the O-press that had been ordered shortly before. With a new control system it is featured by particular energy efficiency.

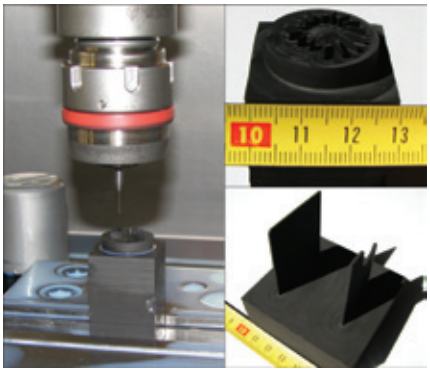
On the press U-cannings for longitudinal seam-welded pipeline pipes with diameters of 12¾ to 48" will be manufactured. This press will be part of a press line comprising an existing crimping-press, the new U-ing and the new 500-MN O-ing press Tenaris already ordered in March 2011. Due to the new press Tenaris is able to produce thicker-walled pipes of higher steel grades in the future.

A particular feature of the Tenaris U-press is its high-energy efficiency. Pumps are provided with servo-and speed-controlled drives. The advantage of this system compared to conventional solutions is that only as much energy as actually required is applied at any time.

The order also covers an innovative press control, drive systems that are arranged directly at the press as well as the automated tool change and automatic clamping system for tool segments. Also included in the scope of supply is the C-U-O application software developed by Siempelkamp by means of which the complete forming process can be simulated and the optimum setting parameters can be determined.

Siempelkamp – Germany
Website: www.siempelkamp.de

Multi-axis CAM solution



VERO Software, a provider of CAD/CAM/CAE solutions for the tooling industry, has released Machining Strategist V13, a powerful multi-axis CAM solution that generates optimum HSM roughing and finishing CNC toolpaths for both the office and shop-floor environment.

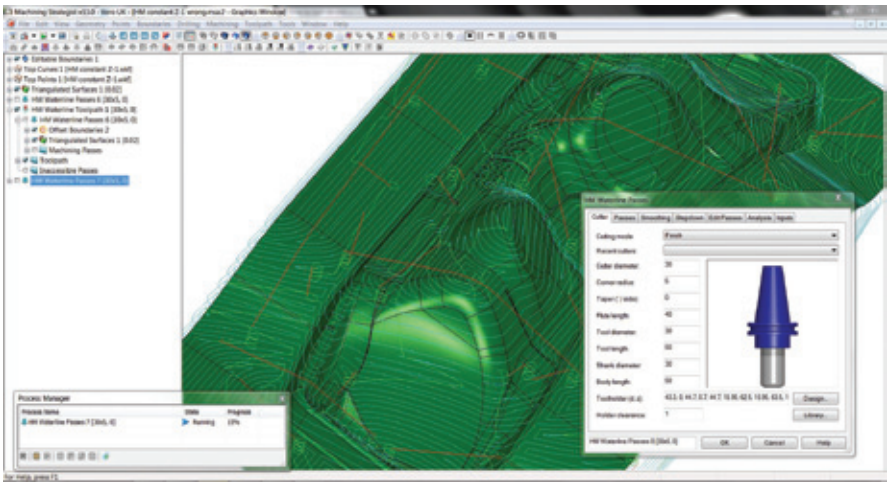
Machining Strategist is a CAD independent solution and can work with data from all major 3D modelling systems. In the latest release support for VISI 19 has been included and the CAD interfaces have been aligned to Parasolid v24, SolidEdge ST4 and Catia v5 r21.

Significant product enhancements include a number of new machining algorithms that will benefit both Machining Strategist customers and OEM partners.

New CAM developments include HM Waterline Passes, a finishing strategy that combines the benefits of a traditional waterline operation with a 3D pocketing routine that interacts with the main strategy whenever the shallow area between consecutive passes allows the insertion of additional passes.

This method allows an optimal finish over the entire part, helping to extend tool life and produce parts with excellent surface finish.

HM Rib Machining Passes is a new strategy designed to machine very thin walls. These walls are often made from exotic materials (such as titanium for aerospace), and therefore a traditional approach to their machining is often difficult and risky, specifically towards the end of the process when the rib is subjected to high frequency vibrations and micro-flexes. This new strategy combines a new roughing toolpath and a finishing strategy to create a unique toolpath that should preserve the highest possible part rigidity.



Further product enhancements include improvements to Helical passes, calculation speed improvements for non-smoothed waterline passes and the ability to define different feedrates within Rest Machining and Combined Waterline for steep & shallow and offset passes.

Steve Youngs, MS development manager, commented, "The Machining Strategist development cycle is driven by customer needs, and an ever increasing requirement to have complete toolpath control when programming complex parts."

Vero Software Ltd – UK
Fax: +44 1242 542099
Email: info@vero.co.uk
Website: www.vero-software.com

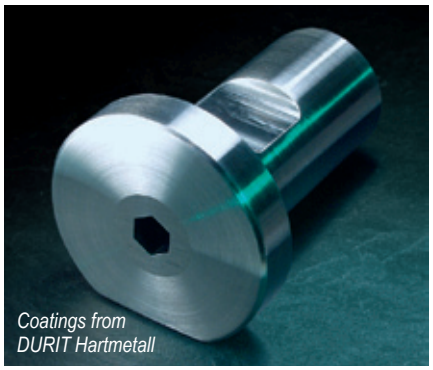
A newly developed coating

ULTRA Impact is now available for applications involving significant wear. The coating combines maximum hardness with excellent toughness and a high degree of adhesion. The combination of these three properties is only possible thanks to a special nanostructure. The hardness ranges from 2,500 to 3,000HV, the coefficient of friction (dry/steel) is 0.5. Layer thicknesses between 2 and 10µm are feasible.

Compared to a TiAlN coating, the toughness of this product is five times higher and it has four times the adhesive force. That makes it ideal for cutting and punching tools, such as stamping or forming dies, and other applications involving a high edge load and corresponding tangential forces.

ULTRA Impact is temperature-resistant up to 1,000°C and is consequently suitable for use in hot forming as well.

The coating enables you to extend the service life of metalworking tools many times over, which saves maintenance costs.



Coatings from DURIT Hartmetall

DURIT Hartmetall GmbH with locations in Germany, Portugal and Brazil has decades of know-how in developing and producing cemented carbide precision tools and components. The current product range comprises over 50 different types of cemented carbide. The production process, from powder to blank right through to the end product, takes place under one roof. DURIT entered the thermal spraying and PVD coatings segment around ten years ago. In 2012 the family enterprise celebrates its 30th anniversary.

DURIT Hartmetall GmbH – Germany
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SHEET METAL WORKING MACHINES AND PRODUCERS OF SPECIAL PROFILES

PM is specialized in the producition of sheet metal working machines and in particular roll forming lines. Experience, innovation and state of the art computer design place PM among the **leading companies** in the sector. PM machines are characterized by high engineering standards, quality, flexibility and efficiency.




Based on our experience, we decided to enrich our services with a **profiles production department**. This department is equipped with 20 section fast change (with cassettes) production lines, with more than 300 products.






We are producing a **wide range of profiles** for various sectors, such as: for the roofing and the building industry in general, for the automotive industry, shelving systems, metallic doors and windows, tubes, etc. Based on the specific customer's requirements we integrate in our roll forming lines processes like punching, embossing, tapering, clinching, seaming or laser welding, etc.

Weld seam detection on precision steel tubes

THE position of a weld seam has a crucial influence on the quality of the final product when bending or hydraulic forming a tube. An unfavourable seam position causes deviations in geometry, has influence on the firmness and in the life span of the produced component or precipitates by cracking during the manufacturing process.

In order to prevent such disadvantages, different solutions for the localisation of the weld seam were established. Common optical procedures, such as colour marking of the longitudinal welds, in order to detect their position are widespread. Camera-based systems, which detect the visible welding seam are also in use.

What to do, if colour marking is not possible or the welding seam is not visible? This problem arises when an application requires a treatment of the tube after welding, for example in the production of precision steel tubes. The cold drawing of the tubes changes the original surface and impedes the usage of colour. If the tube is additionally annealed, the welding seam may become invisible in its external appearance.


Weld seam position has a crucial influence

At this point Roland Electronic offers alternative techniques, well known from the non-destructive testing of materials with eddy current, magnetic induction as well as the magnetic leakage flux method. All these techniques have the advantage of dry functioning and without significant radiation exposure.

This technique is based on the crystalline modifications of the structure within the weld seam. In the process of welding ferromagnetic steel, martensitic crystals are formed within the range of the heat effect zone. Since martensitic crystals hardly occur in the unwelded structure, the welding seam is detected by the crystal structure modification. The Weld Seam Detector SND40 supports these alternative techniques and offers high process reliability in practical usage.

Roland Electronic GmbH – Germany
Email: info@roland-electronic.com
Website: www.roland-electronic.com

New electric coil form machine

Electric coil form machine

BURR Oak Tool Inc offers an electric coil form machine for producing bends in single row coils or multiple single-row coils joined at one end. This machine handles round and flat-tube coils up to 60" wide and three metres long for large commercial HVAC/R applications.

A single, vertically oriented bend arbor produces one, two or three 90° bends, creating L-, U- or box-shaped coils.

This coil form machine is all electric, offering lower energy consumption, greater precision and lower maintenance than hydraulic machines. RFID matches part data to the arbor cover to avoid forming the wrong radius and to prevent scrapping of expensive coils. Options available include slip sheets, coil length measurement, inside coil pusher, bar code scanner and coil staging table.

For over 65 years Burr Oak Tool Inc has designed and customised production machinery for the heat transfer and tube processing industries. Oak machines are installed and successfully operating in over 70 countries. Providing quality machines, service and parts to customers worldwide reinforces Burr Oak's slogan, "Global Experience... Local Solutions."

Burr Oak Tool Inc – USA
Website: www.burroak.com

Oil-free solution for tube bending

THE Irmco line is an oil-free solution for a complete process on tube bending. The line carries both Irmco Fluids® and Irmco Gel®, which are both oil-free.

The products, which are manufactured and sold by exclusive master distributor LBI oil free GmbH, are used at the inception of the tube bending process through to the end. This ensures compatibility with the secondary process and prevents non-value-added processing steps like washing prior to welding and painting.

The products are environmentally friendly, and the processes they affect and the steps they eliminate have an even larger impact on the environment. The company says that is has eliminated over 10mn litres of oil waste alone, not including all of the fuel that clients have saved from improved housekeeping and parts cleaning.

LBI oil free GmbH – Germany
Fax: +49 6247 31 60 86
Email: info@lbi-oilfree.de
Website: www.lbi-oilfree.com

Quik-fit clamp

THE Mathey Dearman Quik-Fit Clamp offers the most advanced method of achieving quick, easy and precise fit-ups. The Quik-Fit is a tack-type clamp that requires no special training to use.

Quik-Fit is available in three sizes to cover a range of 1" to 12" pipes, and can be used on both carbon and stainless steel without adding special shoes or screws. The clamp will not only align pipe to pipe, pipe to fitting, pipe to tee or pipe to flange, but can also be used to adjust for pipe "Hi-Lo".

The Quik-Fit is a tack-type clamp

The lightweight and simple design makes the Quik-Fit Clamp ideal for applications where "out of round" conditions do not exist.

This clamp is another demonstration of the superior value that Mathey Dearman brings to the pipefitting process.

Advantages of the Quik-Fit Clamp include: rugged construction will withstand the conditions on the job site; smooth action of the tension mechanism provides for accurate and firm gripping of the pipe or fitting; stainless steel contact points and alignment screws prevent contamination of the pipe; sliding tensioning "T" handle can be repositioned when working in confined spaces; adjustment screws permit accurate pipe "Hi-Lo" adjustment; light compact design enables working in restricted spaces; guaranteed not to bend or break; two-hand handle for positive locking; and all parts of the clamp are cadmium plated or powder coated to resist spatter and corrosion.

Mathey Dearman – USA
Fax: +1 918 447 0188
Website: www.mathey.com

The tube & pipe mill installation history of Fives Bronx – formerly known as Abbey International – in the OTC global marketplace is unmatched. With the Abbey Technology and it's long history of small to large mill installations in almost every corner of the globe, Fives Bronx boasts the largest O.D. range in the industry – up to 914MM (36") O.D. Fives Bronx engineers have developed mill innovations like our patented Quick Change technology for changeovers in as little as 15 minutes. The system can be retrofitted and reduces downtime, improving overall production efficiency while reducing costs. In addition to Tube & Pipe Mills, Fives Bronx manufactures Entry Systems, Rotary Cutoffs, Draw Benches and Slitting lines.

fivesbronx

www.fivesgroup.com/fivesbronx

Mill Solutions

Range-free multi-controller enhanced

YOKOGAWA Electric Corporation has enhanced the FA-M3V range-free multi-controller PLC with new CPU modules and software.

As manufacturing processes become increasingly complex, the programs that run on the controllers embedded in electronic component and equipment assembly systems and semiconductor manufacturing equipment are becoming more advanced. At the same time, equipment manufacturers have to deal with greater complexity in their processes ranging from design and development to maintenance.

To help customers develop these programs more efficiently, Yokogawa has introduced the WideField3 programming tool for the FA-M3V and Tool Box programming tools for the controller's temperature control/monitoring and positioning modules. The sampling trace function for the FA-M3V's two CPU modules has also been enhanced to allow the long-term logging of field data. With this logging function, any time interval can be specified and many different types of triggers can be set. This greatly facilitates the analysis of problems that can occur at start-up or during normal operation. These new features allow quick system start-up and reduce the workload associated with processes such as design, development and maintenance.

In addition to the newly released WideField3 programming tool, two Tool Box programming tools for the FA-M3V's temperature control/monitoring and positioning modules have been added to the product range. Ever since first releasing these tools in Japan, Yokogawa has worked to enhance them to meet a variety of user needs and to speed up the program development process.

The enhanced CPU modules have a sampling trace function that enables up to 100 traces to be set, allowing highly accurate analysis of large amounts of operation data. By inserting an SD memory card into a slot on the FA-M3V CPU module, users can automatically log data in a trace setting file that can be later used to troubleshoot problems and debug programs. It is not necessary to connect a PC to perform this task. Remote maintenance of the FA-M3V can also be performed by e-mailing trace setting and results files.

Yokogawa Europe BV – The Netherlands
Fax: +31 88 464 1107
Email: info@nl.yokogawa.com
Website: www.yokogawa.com/eu

Infrared heat tool

ERASER's Model LH115 Hand Glo-Ring® infrared heat tool is ideal for many applications including heat shrinking, plastic tube bending, soldering, adhesive curing, solder preforms, butt welding and more. Model LH115 incorporates quartz encapsulated heating elements (Glo-Rings®) which open and close to encircle work pieces with instant radiant heat at adjustable temperatures up to 1,500°F (815°C). No RF interference is generated with the Glo-Rings® and they are suitable for use in clean rooms and testing areas. Model LH115 is an excellent alternative to a heat gun, as it uses less electrical energy, does not blow hot air, is extremely quiet, and is simple to maintain.

The Eraser Company Inc, now celebrating its 101st anniversary in business, manufactures a wide range of industrial products including wire, cable, and tubing cutters, wire and cable strippers and wire twisters.

Eraser Company – USA
Website: www.eraser.com

OCTG asset management

MANY oil and gas companies continue to struggle with one of the most difficult inventory control problems: the storage and movement of OCTG material to, from and within pipe storage and service facilities. Some use antiquated systems or adapt inventory management programs designed for other applications because they are unaware of cost-efficient and productive software platforms that treat OCTG assets the way they would like.

From pipe brokers to exploration services, oil and gas asset managers need to know what they have in supply at a given time. Service facilities often use methods such as the card system or complicated spreadsheets to track pipe movement, pipe storage, pipe threading, heat treatment, pipe inspection and pipe transportation, which can result in inaccuracies due to human error. This can lead to products being double sold, misplaced or mistakenly reported. It can also make it difficult, if not impossible, to give timely answers to questions that need to be addressed.

Scan Systems TDS® (Tubular Data Systems) is a specialised piece of software that was built by 'pipe people' to address the very specific needs within this industry. The inventory control and management software was built explicitly for the storage, handling and reporting of OCTG materials.

Software such as TDS provides not only an OCTG inventory management solution, but also a business process model that can help streamline the operations within the pipe yard or service facility. As a result, all parties get an accurate depiction of where their inventory is at any point in time. This ensures that everyone from the plant manager to the forklift operator is 'on the same page'.

Scan Systems Corporation – USA
Fax: +1 281 219 2317
Email: info@scansystems.com
Website: www.scansystems.com

Pipe system delivers engine sound

NORMA Group has developed, on behalf of a sports car manufacturer, a pipe system designed to transmit engine sounds. Drivers of an upgraded edition of a sports car due to be launched on the German market in the spring will actually be able to hear the high engine power, even though modern technology and insulation typically shield passengers from engine noises. The sound tube will meet a sports car driver's desire to listen to the engine working.

Norma Group AG – Germany
Website: www.normagroup.com

Simulation in roll forming industry

DATA M Software India (dSI) supplies Copra® RF (roll form) software for the sheet metal cold roll forming industry in India and Southeast Asia.

Copra RF is tailored to the tube and pipe industry as well as for roll forming of simple and complex sheet metal profiles.

The software offers a variety of modules for open and closed (welded or seam locked) sections that allow the engineers to design, optimise and verify (high end simulation of production process) the later roll tool performance.

The product portfolio also includes optical scanning systems for roll tool quality control.

To provide quick implementation of software, dSI offers training and after-sales support from a local source in India and neighbouring countries. The company not only performs training on how to handle design and simulation software, but also teaches the basics of sheet metal forming. The training is generally conducted in two stages.

After the first stage, engineers are given sufficient time to practice and prepare for the second stage, which covers how Copra RF could be adopted in their company environment. dSI also provides hotline support and Internet training.

As a local partner dSI offers support in the first real-time projects, to help customers from the very beginning of a product development project.

The company also assists the customer to develop a 'right first time' policy, to succeed in all product developments in an optimum timespan, with minimum cost or unnecessary machine downtime. Roll tool designing, optimising, verifying and troubleshooting of tool sets are dSI's special services for India's roll forming industry.

Copra FEA RF software simulates the roll forming operation by non-linear elastoplastic calculation, allowing product quality verification before putting a new tool set into production.

The software can also perform simulation on post roll forming operations such as tube drawing, tube bending, inline bending of open sections, ring rolling, and profile stretch bending.

data M Software India Pvt – India
Fax: +91 80 2679 6191
Email: india@data-m.com
Website: www.data-m.com

CNC-controlled table marking

THE NetMarker® table marking system from Markator® Manfred Borries can durably mark small-sized workpieces or identification plates.

The CNC-controlled table marking system offers high operating comfort and fulfils the requirements of industrial marking. The system works electro-pneumatically and marks nearly all materials, from hardened steel to pressure sensitive, thin walled, coated or slightly arched work pieces.

The NetMarker is characterised by a maximum marking speed, high marking quality and good price-performance ratio. Additionally, the system works absolutely maintenance free.

The system is also available as part of Markator's new XL product range. While a PC was needed for the operation of the standard version of the NetMarker, the new NetMarker XL table marking system can be operated with a central control unit.

The software on this compact and space-saving control unit is 100 per cent operator controlled, clearly represented and well structured.

The central control unit can be operated via a USB keyboard. Well-known functions such as auto-numbering, time, date and circle marking are still available, as well as the possibility to connect a rotating axis to mark round work pieces. Special characters and logos are available on request.

The Ethernet and USB interfaces of the central control unit enable easy connection to the PC software, and easy transfer of marking files, fonts and logos. The central control unit's large, high-resolution LC colour display shows all information at a glance and makes the creation, modification and final check of the marking file very easy.

The central control unit offers memory space for several hundred marking files, logos and fonts, making it possible to create and save a marking file for each customer, shift or type of workpiece. This file can then be loaded any time it is needed. Marking text, logo and coordinates can be saved in the marking file.

Markator Manfred Borries GmbH – Germany
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Website: www.markator.de

Full line of quality non-ferrous saw blades for use on table saws

FORREST Manufacturing provides a wide selection of circular saw blades for cutting non-ferrous metals such as copper, aluminium, and brass. These blades are available in a choice of diameters and with tooth counts suitable for light and heavy wall tubes, extrusions and plates.

In discussing his company's line of non-ferrous saw blades, vice-president Jay Forrest said: "We currently offer nineteen of these special-purpose blades and can also accommodate custom orders. Although most of the products our company manufactures are for wood applications, we're proud to have a full complement of blades for use on metal plates, extrusions, tubing, frames, rods, window sashes, and so forth. These blades are suitable for all types of metal-working saws. You get excellent results whether you are using a table or chop saw. In addition, our non-ferrous saw blades are competitively priced and can be relied on for the same high performance and dependability that customers expect from all Forrest products."

Mr Forrest said: "We've based our line of metal-cutting blades on our popular and very precise Miter Master blades that do such an exceptional job of cutting aluminium. So you can confidently depend on all of our non-ferrous saw blades for smooth, polished, exact cuts. Burrs are eliminated. There is no need for filing."

Forrest's line of non-ferrous saw blades are made of strong, corrosion-resistant C-2 micrograin carbide. This gives them up to a 300 per cent longer life between sharpenings, compared to other carbide blades. The blades are hand-straightened to ensure perfect flatness and have exceptional perimeter concentricity and side runout of ±0.001. The company also offers state-of-the-art factory sharpening of all brands of carbide-tipped circular saw blades at a very reasonable price. In addition, all Forrest blades come with the company's 30-day, money-back guarantee.

In addition to its line of non-ferrous saw blades, Forrest offers a wide variety of other custom and speciality blades. These include its signature line chop master, finger joint sets, Duraline Hi-A/T, and Concave Face blades. Forrest's two most popular blades, the Woodworker II and the Dado King, have received numerous awards and recognition from industry experts who regularly test and review saw blades for quality of cut and cost-to-value ratio.

Forrest – USA
Website: www.forrestblades.com

Spotlight on: Europe

As the euro crisis eases, multinationals step up their investments in the zone and elsewhere on the Continent

With a shift in emphasis toward the revival of growth, European officials and politicians are meeting with success in attracting private investment from big global firms. Important commitments of new money in Europe include the following:

› Infosys, the big Indian technology consulting and outsourcing company, plans considerable investments to expand its ranks of software professionals and to set up additional sales and consulting offices in its core northern European markets: Britain, Germany, France, Switzerland and the Benelux countries.

› In 2011, Europe for the first time edged out the US as China's main focus of overseas investment. So far this year, China's European deals have included the purchase, by the State Grid Corporation of China, of a 25% stake in Energias de Portugal, the country's principal utility.

› Michelin, one of the world's largest tyre makers, intends to invest more in plants, equipment, research and development on the Continent this year and beyond. The French company also plans to spend close to $80mn to update machinery at its factories in Britain over the next five years, and is also looking at possible expansions in Eastern Europe.

American firms also figure prominently in the European investment trend:

› Dow Chemical expanded its presence in the region by allocating some $13.2mn for a new water-desalination research centre on Spain's eastern seaboard, about 50 miles southwest of Barcelona;

› In Ireland, the computer products giant Microsoft recently invested $130mn to expand a data centre outside Dublin;

› In Germany, General Electric made a $40mn investment in expanding research and development in energy, aviation, and medical technology, and is putting an additional $74mn into broadening its commercial presence there.

A European Union plan to impose emissions fees on airlines meets with fierce opposition from 23 countries

The European Union's Emissions Trading System, introduced 1 January, requires airline companies serving the EU to pay for their greenhouse gas emissions by means of a system of special permits. Airlines that do not obtain the necessary permits will incur fines from the EU beginning in April 2013. If they fail to pay, they could be denied the freedom of Europe's airspace.

As it happens, 85% of the permits are being awarded at no cost, and the remaining 15% are initially expected to add only about $2 to the cost of a transatlantic passenger ticket. But, wrote Aaron Wiener in *Spiegel International Online*, "For representatives of 23 countries who convened in Moscow on 22 February, the price is too high." ("Global Opposition Grows against EU Emissions Law," 24 February)

The US, China, Japan, Russia and India are among the signatories of the so-called Moscow Joint Declaration, which expresses their disapproval and their intention to coordinate punitive measures against European airlines. This retaliation might include taxes on airlines that fly into or over their countries. Beijing has already banned its airlines from joining the emissions trading system without its permission, and has threatened to take unspecified reactive measures. Airlines, which have opposed Europe's unilateral action, cheered the Moscow declaration. Tom Enders, CEO of Airbus, the manufacturing unit of the European aerospace company EADS, had spoken for many of them when he expressed increasing concern at the potential fallout from the Emissions Trading System.

"I am very worried about the consequences of that," Mr Enders told Reuters on 13 February, at an aviation conference ahead of the Singapore Airshow. "What started out as a solution for the environment has become a source of potential trade conflict, and that should be a worry for all of us."

Chinese sensibilities are a particular anxiety. China's domestic air traffic quadrupled in the past decade and is expected to keep growing at more than 7% a year for the foreseeable future, according to Airbus. And Boeing, its American rival, expects China to be the second-biggest market for new aircraft, after the US, at least until 2030. As a sign of its displeasure over the developing EU plan, China last year delayed the final signing of a deal for ten Airbus A380 double-deck, wide-body, four-engine jet airliners worth $4bn for Hong Kong Airlines. In the mid-1990s, it refused to buy French products like Airbus planes in retaliation for France's sales of fighter planes and frigates to Taiwan.

› If the EU law remains in place, *Spiegel*'s Mr Wiener wrote, "The European Commission estimates that it will reduce airline emissions of carbon dioxide by 183 million metric tons by 2020 – a drop of 46% compared to what emissions would be without the law. According to the [Geneva-based] Intergovernmental Panel on Climate Change, the aviation industry is currently responsible for about 3.5% of human-caused global warming."

Energy

The other side of renewable: a Danish imperative to establish reliable outlets for excess wind power

"The incidents have highlighted the risks of expanding the reliance on renewable sources like wind before necessary grids, storage,

and other technologies are established to handle their intermittency and volatility."

The first "incident" recalled by James Kanter, of the *International Herald Tribune*, occurred during howling weather in the winter of 2010, when Denmark's heat and power plants were running full bore. So, too, were thousands of windmills both inland and along the coastline, and for a few hours they generated so much power that Danes had to pay other countries to take the surplus. Since then, according to the national grid company Energinet.dk, there have been two more instances in which the price of wind power in Denmark turned negative for a significant period of time because of excessive wind.

Writing from Copenhagen on these unintended consequences, Mr Kanter was taking up a topic of keen interest in Denmark. A highly ambitious recent proposal by the Danish government calls for generating half the nation's power from wind within eight years – up from less than a quarter now. Before approving the target the Danish Parliament must address, among other factors, the expense of the plan. Danish consumers already pay more than the European average for their power. ("Obstacles to Danish Wind Power," 22 January)

But Mr Kanter, who also writes on energy and environment issues in the blog Green Inc, noted that the reaping of wind energy has pan-European significance. Experts say that the critical factor in enabling Denmark to meet its goal will be investment in new and bigger interconnectors to trade more electricity with neighbouring countries.

Anders Eldrup, CEO of Dong Energy, the biggest Danish power utility, told the *Herald Tribune* that some such projects are under way within Scandinavia, with plans as well for interconnectors between Denmark and the Netherlands. There also have been some early-stage discussions about building an interconnector with Britain. "It is a steep increase to go from 20% to 50% wind in just a few years time, so there is a challenge there," Mr Eldrup said. "But I think our experience tells us that there are solutions to these challenges."

For Jens Moller Birkebaek, the Energinet.dk vice-president, who believes the government's target is "possible but not straightforward," the biggest challenges may be technical. He said a major concern is that the supply of electricity could exceed demand for about 1,000 hours each year by 2020 unless there are substantial changes in the way Denmark manages its electricity.

Supply and demand

Meanwhile, the wind bloweth where it listeth, and Denmark already must store abroad large amounts of excess energy from its fleets of windmills. In Norway and Sweden, wind power from Denmark pumps water uphill to reservoirs. That water is released and drives turbines when power is in demand. But the Danes often pay more for the repurchased power than they received for the surplus because prices depend on demand in the broader Nordic power market.

Improved weather forecasting could help power companies anticipate when other countries need Danish power and when they are in a position to sell power to Denmark. Additionally, Mr Kanter wrote, "Denmark also is expected to take advantage of an existing plan to remove overhead power lines and bury them underground to install a more efficient and responsive domestic grid to help handle variations in the wind."

For his part, Dong Energy's Mr Eldrup said using vastly more wind is part of his strategy to close down coal plants within 20 years by using electricity generated from wind, biomass and gas. Less polluting than coal, the power could also be fired up quickly when the wind dies down.

"Big-scale wind and gas are a sort of yin and yang," Mr Eldrup said. To encourage the combination, governments would need to allow utilities to earn a premium rate for using gas to encourage the utilities to switch it on and off when needed. New storage technologies to manage the increase in wind power might also be necessary, he said.

One storage strategy that Dong is already focused on is the projected electrification of Denmark's transport sector. Two years ago the power utility took a stake in the Danish subsidiary of a US company – Better Place (Palo Alto, California) – that leases batteries and builds charging facilities for electric vehicles, including home charging equipment and battery swap stations.

Mr Kanter reported, "Renault, the French car manufacturer, has received orders in Denmark for about 1,000 models of its all-electric Fluence that will operate on battery systems from Better Place. Delivery of those cars should start in coming weeks, and there could be 20,000 electric cars on Danish roads by 2014, according to Better Place."

Automotive

Big improvements in conventional gasoline-powered cars narrow the mileage gap with hybrids in the US

Before investing hope in electric cars as a means of balancing power on its national grid [See "Energy," *above*), Denmark might pay heed to an increasingly pronounced trend across the Atlantic. In the US, gasoline-powered cars are making headway against hybrids, which saw market share slip to 2.2% in 2011 from a peak of only 2.8% in 2009.

As reported by Keith Naughton of *Bloomberg News,* the efficiency of conventional engines has improved so much that the miles-per-gallon (mpg) gap is closing, making it harder for prospective car buyers to justify paying more for gas-electric models. ("Hybrids' Unlikely Rival: Plain Old Cars," 23 February). Mr Naughton cited the experience of one such shopper, Doug Hacker of Cincinnati, Ohio, whose co-workers strongly recommended the Toyota Prius hybrid for its fuel efficiency (50 mpg). But a little research by Mr

Hacker led to a surprising discovery. While costly hybrids did win on mileage, he could save more money by buying a car powered by a technology that has been around for 151 years: the internal combustion engine.

"I was surprised to see that cars like the [Ford] Fiesta were actually about a nickel cheaper to run per mile than the Prius," said Mr Hacker, who bought a Fiesta for $16,400 instead of a Prius for $23,015. He averages 37 mpg, which he claims is on par with the real-world mileage of those of his Prius-driving friends who don't take extreme measures (such as "dressing like Eskimos" to avoid turning on the heat) to boost their mpgs. *Bloomberg*'s Mr Naughton explained that everyday workhorse engines are being enhanced by modern technologies that allow gas to burn more efficiently, such as electronic controls, eight-speed transmissions that keep engines operating in their optimal range, and direct fuel injection. He wrote, "Combine those with tried-and-true technologies like turbo-chargers, and auto makers can improve mileage and horsepower simultaneously."

As auto makers use new and not-so-new technology to wring efficiency from traditional motors, gasoline-electric hybrids are falling out of favour. Consumers do not want to pay as much as $6,000 extra for a hybrid when they can get 40 mpg on the highway in a standard car such as a Chevrolet Cruze or Hyundai Elantra. And, Mr Naughton noted, advances that enable engines to burn fuel up to 20% more efficiently mean that some of the conventional cars coming this year will deliver hybrid-calibre mileage.

Combustion's comeback has large implications – mainly for the US auto industry's ambitious plans to roll out an array of electrified vehicles to meet more stringent federal fuel economy regulations. According to industry forecasts, by 2020 the number of hybrids, plug-in hybrids and electric vehicles on the US market will nearly quadruple to 153 offerings from 40 last year. But, with buyers showing a preference for gas-sipping regular cars, auto makers may rethink the need to stock their showrooms with so many hybrids, which aren't nearly as profitable because of their costly technology.

Mr Naughton noted that Ford Motor Co has picked up the warning signals. After seven years of slim sales, the auto maker is dropping the hybrid version of its Escape SUV. Instead, it will offer two fuel-efficient gasoline engines this year that nearly match the 34 mpg the gas-electric version gets in city driving. He explains: "Thirty-four miles per gallon is a great number," Sherif Marakby, director of Ford's electrification programmes and engineering, told *Bloomberg News*. "But people are really looking for something much higher in a hybrid. They're looking for something in the forties. And now you can get 40 mpg highway without a hybrid."

Of related interest . . .

To reduce inventory of its Chevrolet Volt because dealers had more than they needed, General Motors announced a suspension in production of the plug-in hybrid for the period 19 March through 23 April – approximately five weeks. The decision meant

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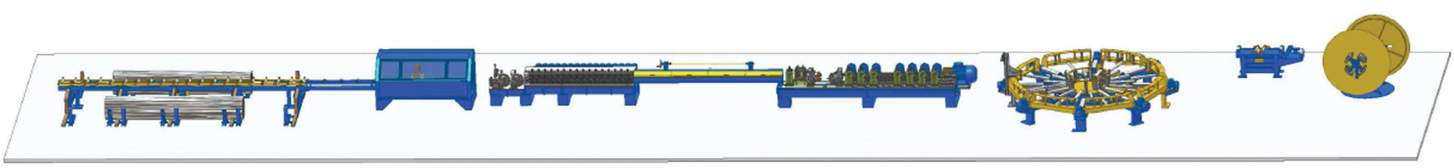

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temporary layoffs for 1,300 workers at the Detroit plant that builds the Volt, where production capacity was tripled during downtime last summer. This marks the third time that production has been stopped for at least a month since the car first went on sale in December 2010. GM officials had already backed away from projections that they could sell 45,000 Volts in the US this year, saying instead that they would seek to balance inventory, production and demand. The company sold 7,671 Volts in 2011, missing its goal of 10,000 for the year.

GM sold 1,023 Volts this February, up from 603 in January, on the heels of a federal investigation into the possibility that its battery pack could catch fire after a severe crash. Regulators concluded that the car was no more dangerous than a traditional gasoline-powered vehicle.

Fiat, the Italian car maker that controls Chrysler of the US, will build Jeeps in Russia with a local partner

After climbing by 39% to 2.65 million vehicles last year, Russia's market for cars and light commercial vehicles is expected to grow at a much more moderate pace in 2012: up 5%, to 2.8 million units, according to an estimate published by the Association of European Businesses. Despite these reduced prospects, an initiative by the Russian government to promote direct investment in the country's automotive industry continues to attract car makers from overseas.

Preceded by Ford and General Motors, of the US, and Germany's Volkswagen – which in 2011 all signed deals with Russian partners to expand production in their country – Italy's Fiat SpA on 27 February said it had signed a letter of intent with Russian state bank OAO Sberbank to form a joint venture to build Jeeps in St Petersburg and in Moscow. The Jeep brand is owned by the Italian company's American subsidiary Chrysler Group LLC.

Turin-based Fiat is to hold 80% of the Russian venture; Sberbank, a minority stake of up to 20%. It was not disclosed how much of the $1.10bn estimated cost of the project was to be assumed by each partner.

As reported by the Italian daily *Corriere della Sera*, Fiat and Sberbank intend to erect a factory in St Petersburg and to contract for the use of a plant in Moscow now run by ZIL, or Zavod Imeni Likhachova. ZIL is best known as maker of the limousines favoured by Kremlin officials of the Cold War era.

Fiat and Sberbank said they expect to finalise their agreement by July. On the day of the announcement, Fiat CEO Sergio Marchionne told reporters in Brussels that he aims to start up the Russian operation within 24 months. Production capacity is to be 120,000 vehicles per year.

Fiat already has a presence in Russia through CNH NV, the tractor and combine maker owned by its sister company Fiat Industrial SpA. A previous effort by Fiat to form a partnership with OAO Sollers, formerly OAO Severstal-Auto, was preempted by Ford. Other foreign car makers with Russian automotive partners include Renault SA (French), which owns a 25% stake in OAO AvtoVAZ; and Daimler AG (German), working with the truck maker Kamaz.

As reported by Tommaso Ebhardt and Craig Trudell of the *Detroit Free Press* (28 February), the Russian initiative represents an effort by Fiat and Chrysler to boost Jeep sales outside North America. The brand's deliveries in other parts of the world climbed 41% to about 105,000 units in 2011. Jeep may build a vehicle in China as early as 2013 or 2014, a spokesman for Chrysler said in January.

Steel

Outokumpu has raised the prices of its stainless steel products, citing higher nickel costs and stronger demand. The Finnish company applied these increases per metric ton, effective 1 April:
$80 – austenitic rolled sheet and coil;
$48 – ferritic cold rolled sheet and coil;
$80 – hot rolled continuously produced plate and quarto plate.

Outokumpu on 29 February also announced that it had delivered 650mt of stainless steel quarto plates to Tonapah, Nevada, for use in a hot nitrate salt storage tank at the Crescent Dunes solar energy project there. The plates – made of heat-resistant stainless grade 347H at an Outokumpu unit in Degerfors, Sweden – were received by Felguera IHI, the Spanish company responsible for construction of the molten salt storage system for SolarReserve (Santa Monica, California).

The tank will store heat energy for up to 15 hours, enabling the solar power plant to operate without interruption. By the end of 2013 the 540-foot tower of Crescent Dunes is expected to be generating 110 megawatts to power Las Vegas at night.

Atlas Tube, a division of JMC Steel Group (Chicago), announced 22 February that it will partner with two Japanese companies – Nippon Steel & Sumikin Metal Products and Mitsui & Co – to supply "jumbo" hollow structural sections (HSS) to the North American market. Sizes range from 18" to 22" square in wall thicknesses up to 0.875".

Typically used in vertical column and diagonal bracing applications and as members of large, long-span trusses, jumbo HSS sections may offer a cost-effective alternative to open sections and built-up welded box sections for use in structures with high load demand – even for seismic loads. Atlas Tube is the largest North American producer of HSS, with five facilities in the US Midwest and in Canada. It will handle marketing and distribution of the jumbo products.

After a testing period of 15 years, a less brittle but still hard and wear-resistant steel has been cleared by Channel Tunnel authorities for replacement use in the tracks of the 31-mile-long rail network (24 miles of it undersea) that connects the United Kingdom with the north of France. As reported in *Forbes India* (28 February), the inventor of the steel – scientist Harry Bhadeshia, who is Tata Steel Professor of Metallurgy at the University of Cambridge –

showed that the bainite phase in steel is formed through a process of "diffusionless" and not "diffusional" transformation.

Unlike the earlier version of steel in the roadbed of the "Chunnel" – utilised by 17 million people a year – Prof Bhadeshia's steel is without any carbide content but is rich in silicon.

Oil and gas

The Deepwater Horizon settlement: BP saves itself time and negative publicity and gets money to the plaintiffs promptly

The announcement on 2 March of a proposed $7.8bn deal in the BP civil trial does not spell the end of the case. The proposed settlement between the British oil and gas giant and the group of lawyers leading the litigation for individual and business plaintiffs will shut down the current claims process and create a new fund, administered by the court. It will draw on money set aside by BP within the $20bn escrow fund that was being used to pay claims of economic loss and other expenses.

The blowout of the Macondo well in the Gulf of Mexico in April 2010 destroyed the *Deepwater Horizon* drilling rig, on lease to BP. The explosion and fire killed 11 workers, spilled an estimated 200 million gallons of oil, and disrupted lives and businesses. The settlement agreement would apply to tens of thousands of victims across the Gulf Coast region but does not resolve lawsuits with federal, state and local governments or address environmental damage. Those other claims could total up to $25bn.

What the tentative settlement *does* do is demonstrate a willingness on the part of BP to pay a huge sum to resolve issues related to the spill. It won prompt praise from Kenneth R Feinberg, the administrator of BP's compensation fund, who called it "good news" and said, "It avoids a lengthy, complex trial and uncertain appeals."

The deal also mitigates the potential financial damages faced by BP. At one time it seemed conceivable that the company's spill-related costs could reach $200bn. Now, lawyers and industry analysts place the estimate at less than a quarter of that.

Perhaps most important of all, to BP, the settlement sends an important signal: to investors, Gulf Coast states, and US regulators – notably those federal officials who control access to oil reserves that are critically important to the company's future.

BP also looks good in comparison with Exxon, the US oil company which took 20 years to settle the case of the *Valdez*, a tanker which ran aground in Prince William Sound, Alaska, in 1989. That spill was the largest ever in US waters until the *Deepwater Horizon* event.

› To some observers, the BP settlement was a disappointment. If the case had gone to trial, presumably decisions and mistakes that led to the disaster would have been examined in detail.

Dorothy Fabian, Features Editor (USA)

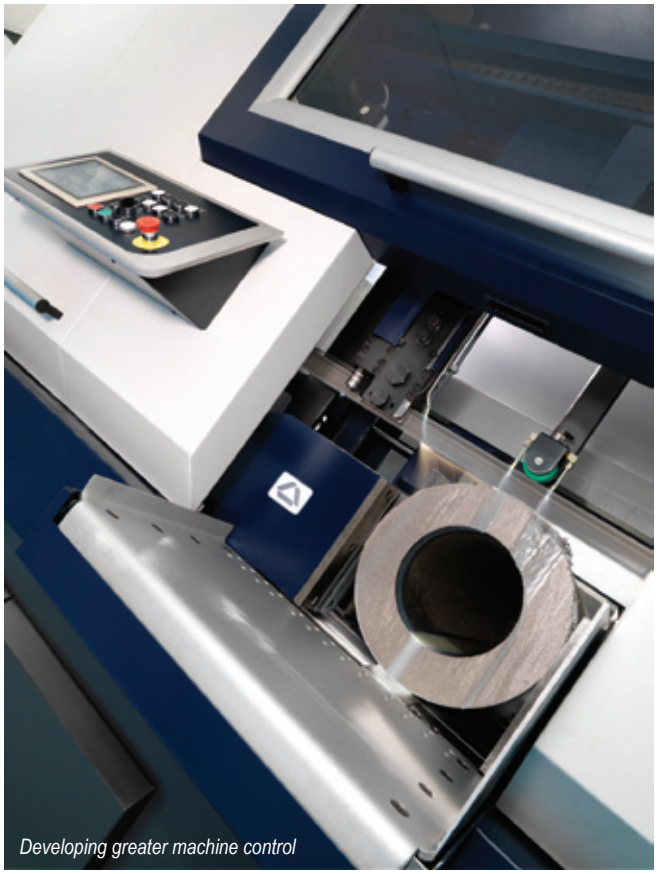
Cutting, sawing and profiling technology

Mair Research: (see page 89)

Today, an average-size or even a small tube and pipe plant is likely to command impressive cutting capacity, with a single highly flexible machine able to cut a variety of profiles either at the end of the tube or along its length. Employing one tool in a single cycle to cut round, square, rectangular, flat, oval, and virtually any other form, the unit will outperform cutters that only recently were state-of-the-art. Very likely it automatically loads and positions the tubes without operator intervention and allows for storage of tube bundles.

But some things never change, not even in a universe of 3D modelling, CNC profiling, and cold saw and plasma cutting. To cut or saw any tube is to create two new surfaces that must be clean, flawless, and caliper-precise. This is the province of professionals who see it as their responsibility to assist those who cut tube and pipe, by whatever method, to do it perfectly the first time.

Satellite navigation for bandsaws


Developing greater machine control

OBVIOUSLY, bandsaw machines and bandsaw blade technology have made huge advances over recent years, but it does not mean that we can relax because there is still a lack of technology when it comes to machine control.

It is the operators "experience" that decides what speed the blade runs at and the operators "experience" that decides the downfeed rate of the machine, which means it is the saw operator and not management that control production and the saw operator that dictates overheads in terms of blade life and blade costs.

Danobat has introduced its new iSOFT control system to eliminate this factor. This new system allows companies to achieve maximum production rates together with optimum blade life with minimum input from the operator.

By simply selecting different options from a very simple screen the machine works automatically with a higher reliability than any human being. Among different options the user can find variables such as: material grade, so once chosen among carbon steel, stainless steel, nimonic or non-ferrous materials, solid or tube, the machine will automatically set its own parameters in terms of cutting rates and blade speed and will continually adjust itself, depending on the cross section of material and the blade condition.

So, although at the moment the most important factor that influences cutting efficiency is the operator's experience and it is the operator's experience that decides the blade speed and the downfeed and also decides indirectly about the blade life, this has now changed to a more scientific process thanks to Danobat.

While most material specifications are pre-programmed into the iSOFT, there are spare programs so that companies can add their own specific material groups, if required. Another unique feature is automatic "running-in" of a new blade, whether it be bi-metal, carbide or a new blade (futurible nueva cinta). This is an area that tends to be neglected and results in premature blade failures.

With the Danobat system, it not only eliminates the guess work, but allows the operator to input a specific make of blade to ensure that the correct running-in procedure is being followed.

The machine will also calculate the weight of each cut component and display that weight on the control console. The result of the iSOFT is maximum production and optimum blade life.

Danobat – Spain
Website: www.danobatgroup.com

Precision circular saw blades

AKE is a manufacturer of circular saw blades with many years' experience in development and production. Its customers include specialists from all fields of the metal processing industry. The company offers the technology and economic efficiency required to improve production processes sustainably.

Wagner by AKE is a range of high-performance saw blades designed for cutting steel, non-ferrous metals and composite materials. The field of application of these circular saw blades is to be found with an average cutting range of 80mm for solid material, particularly where there are increased demands on the cutting edge quality and tolerances of the saw blade.

The 'tubeExtreme cut' precision circular saw blade represents another successful development from the long-established company – a product with jointed carbide tips and a very small tooth pitch of 4.5mm.

The blade is suitable for all thin-walled tubes and profiles, and provides high cutting quality by use of good guiding features and high material utilisation due to the thin kerf. The extremely small tooth pitch allows high feed rates and short cycle times.

AKE Knebel GmbH & Co KG – Germany
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High precision laser cutting

MAZAK 3D Fabri Gear, from Yamazaki Mazak Optonics, is a 3D laser cutting machine for large tube and profile processing. It allows non-stop cutting of different shapes with a single machine set-up, using a universal focal torch (7.5" and 5") to obtain the right angle inclination in every point. This ensures a perfect match between cut parts having different shapes, and realises a proper chamfering for welding operation. This technical feature allows efficient processing on structural parts for carpentry construction.

The machine is equipped with four chucks to process long finished parts, automatic and compact centring clamps to minimise material scrap, and both side longitudinal movement. The automatic loading/unloading system is able to process tubes and profiles with maximum length up to 15m, maximum tube diameter 323mm, and profiles with a maximum section of 250x250mm.

CNC controls the pipe's shape, using a measurement system that detects shape failure in the workpiece. Thanks to a special device located beside the cutting torch, the welding joint is detected to orientate it in a convenient position.

Yamazaki Mazak Optonics is the laser division of the Japanese Yamazaki Mazak Corporation. Yamazaki Mazak has eight production factories, 50 technological centres and 45 technical centres.

In 2008 the company opened the Phoenix Laboratory – a unique and futuristic factory with more than 10,000m^2 of production area, 20m underground, for the construction of advanced laser technologies.

The new Mazak World Parts Center, connected with the worldwide distribution centres, provides spare parts worldwide.

R&D centres are present in all production factories to develop the most suitable solutions for clients' needs.

Yamazaki Mazak Optonics Europe NV – Belgium
Fax: +32 12 7253320
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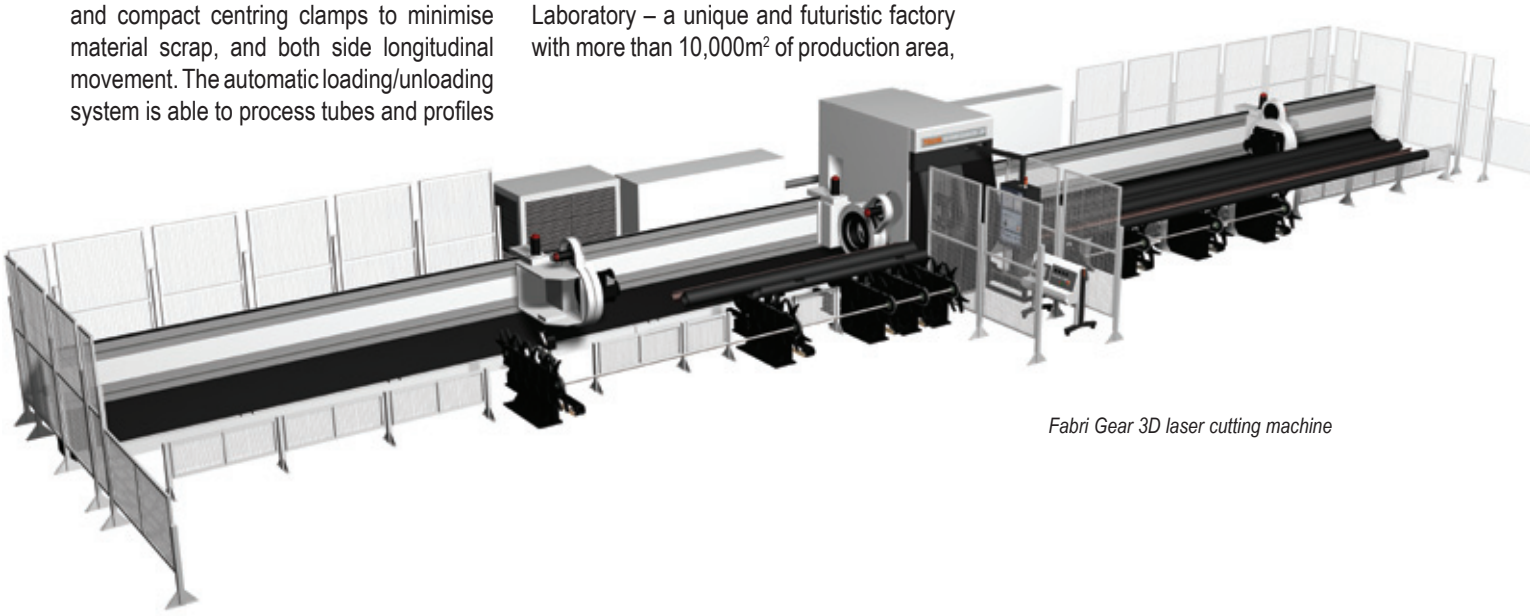

Fabri Gear 3D laser cutting machine

Circular saw blades

TANGSHAN Metallurgical Saw Blade Co is based in Tangshan City in the north of China. The company, established in 1963, has been engaged in manufacturing a wide range of circular saw blades for more than 45 years.

The company produces five kinds of circular saw blades with more than 2,000 specifications, including metal hot-cutting circular saw blade (Φ800-2,500mm), metal cold-cutting circular saw blade (Φ300-1,600mm), TCT circular saw blade (Φ300-2,200mm), HSS segmental circular saw blade (Φ630-1,430mm), and diamond circular saw blank (Φ300-3,500mm).

Friction saws and TCT milling saws are widely applied for cutting the seamless pipes and ERW pipes. Chinese steel pipe producers like Baosteel Group Corporation, Tianjin Pipe (Group) Corporation, Hengyang Valin Steel Pipe Tube Co Ltd, Pangang Group, Baotou Iran & Steel (Group) Co Ltd, Angan Steel Co Ltd, Kingland Group Co Ltd, North China Petroleum Steel Pipe Co, Tianjin Grey Steel Pipe Co Ltd and so on are main and stable customers of Tangsaw. Besides steel pipes, Tangsaw products are also introduced for cutting steel sections (like H-beam, I-beam, angle steel and channel steel) and steel round bars. Now Tangsaw products are equipped with famous sawing machines like SMS, Linsinger, MFL, Danieli, Wagner, Nippon, Hitachi and Abbey.

Tangsaw is the first saw blade manufacturer in China to pass the ISO 9001 quality management system and is applying for the ISO14000 environment management system. In addition, Tangsaw has imported the most advanced manufacturing machinery and technology for producing saw blades. This includes advanced equipment such as CNC TCT grinding machines, automatic brazing machines and laser cutting machines from Germany.

Tangshan Metallurgical Saw Blade Co – China
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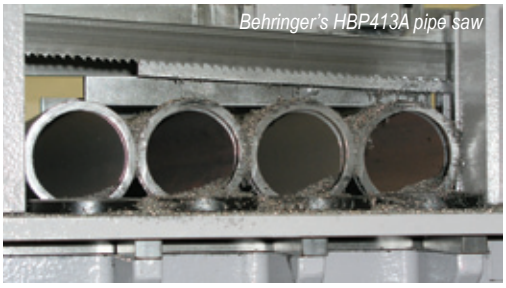
410mm capacity band saw


Behringer's HBP413A pipe saw

WITH the HBP413A, Behringer GmbH is continuing its record of success with the HBP313A, and can now also offer a suitable band saw model for the 500mm sawing range with a height of 400mm.

This eleventh variant in the HBP series has a cutting capacity of 410mm for logs, tubes and pipes and 500 x 400mm (W x H) for flat material. With cutting speeds from 20 to 140m/min, depending on the material and thickness, the HBP413A cuts quickly and accurately.

A rigid, low-torsion, low-vibration saw frame in a stable cast construction with backlash-free, pre-tensioned quadruple guides ensure the best cutting results, even with material demonstrating difficult cutting properties. The machine's two guide columns are ground and hard chrome plated. A saw frame with a 3° incline offers a particular benefit when sawing profile material.

The hydraulic saw blade clamping fixture is electronically monitored, with a sensor system ensuring automatic pressure reduction in case of machine standstill. Optimum service life and precise cut-offs at high output are guaranteed both by a constant cutting freed rate and a constant cutting force when working with pipes and sectional material. The height of the saw frame can be fully automatically adjusted in line with material height, and the frame also features a rapid lowering function in automatic operation to reduce downtime.

The HBP413A is configured for operation with minimal manning. The material is clamped hydraulically in the horizontal direction, with facility for stepless adjustment of the clamping pressure. The cylinder stroke stretches over the whole of the cutting area. A feed gripper mounted in self-aligning bearings transports even heavy solid material reliably into the machining position, and the automatic system switches off immediately when the end of the fed material is reached.

Behringer's HBP series encompasses ten different sawing machines with a cutting range from 260 to 510mm. Due to their modular design structure, the individual models of the series can be quickly assembled by the manufacturer using the various modular elements. The machines are all either semi- or fully automatic models, and can be supplied with an optional mitre facility.

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Four-blade milling cut-off

THE main features of milling type flying cut-off machines equipped with tungsten carbide tip (TCT) saw blades are clear cutting surface and less deformation at the cutting end.

In addition to its existing 'RLC' two-blade milling cut-off, Japanese manufacturer Nakata has developed the Rotary Swing Cutter (RSC), a new four-blade machine for large size mills over 16" OD. The cut-off motion of the RSC is performed by a rotary disc on which swing blades are mounted. The machine weight can be reduced and a robust structure is realised thanks to a simple and compact mechanism, by uniting the cutting heads with the main motors and blade feeding motors.

The machine has a strong clamp system, which is indispensable for stable cut-off. The system clamps the pipe at two positions both for entry and exit sides for the large size pipe mill. Nakata examined and analysed various cut-off conditions in order to implement the most appropriate one for achieving longer life of the TCT blades.

Nakata Mfg Co Ltd – Japan
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Website: www.nakata-mfg.com

Automated systems

ADVANCETECH in collaboration with Rusch-Scortegagna proposes a complete range of machines and accessories for the thermic cut of sheet, tubes and beams. These products allow cutting, drilling, tapping and calking operations.

The Advancetech machines are quick, easy to operate, and offer a high degree of personalisation. The solutions can provide high productivity and quality of working surfaces, either plane or inclined. The automation level of the installations allows the operator to carry out other jobs, and features include simplicity of use together with modern programming systems.

Advancetech provides after-sales assistance to support the final customer, including free tele-assistance service on all machines.

Rüsch-Scortegagna Srl – Italy
Fax: +39 0445 320250
Email: export@rusch.eu
Website: www.rusch.eu

Modern levelling and cut-to-length lines

SEVERAL things are changing in the market of steel sheet, with important consequences for machines designed to produce it and turn the strip from the coil (in various widths and thicknesses) in to "cut sheets" prepared for the processing of final products.

The cut-to-length lines are the most affected by the evolution in act. The growing demand for rolled products pushes to increase the speed and precision of cutting: working speed of thickness up to 3mm is 80m/min with an accuracy of ±0.25mm on the length (cut with rotary shear). For thicknesses up to 8mm working speed is 40m/min with cutting accuracy ±0.25mm on the length (cut with rotary shear). For thickness from 4 to 20mm, the speed is 40/20m/min with a length tolerance ±0.5mm (cut with flying shear).

But in recent years there has been also the spread of high strength steels whose superior mechanical properties require – for cutting and levelling – forces and higher powers involving the critical review of the entire mechanics of machines that make up these lines. The importance of the levelling (not to be confused with the straightening that only serves to remove the residual curvature of the winding coil) is generally underestimated. The operation is, however, of fundamental importance for the quality of the sheet. If levelling is not perfect, the plate may seem flat but retain residual stresses in it. In its transformation into finished products, for example by precision trimming (or fine trimming) cutting the material with the punch, the fibres are cut and the internal tensions are released: the result is uncontrolled deformations and blanks geometrically different from the punch and the drawing. Deformations are often unacceptable for quality products. The same drawback occurs in the heat precision cutting, for example with high-definition plasma or laser. The increase of the quality requirements imposes a levelling almost perfect and, then, levelling lines of greater efficacy and efficiency.

Euroslitter – Italy
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Multiple cutting system for tubes

MAIR Research SpA designs cut to length stations for the multiple cut of the product at the same time.

The sturdy design of the cutting heads, together with the use of prime quality components, assures stable cutting conditions and long life of mechanical components.

Mair machines are equipped with the latest technology of carbide tipped sawblades (disposable or resharpenable types).

The selection of the sawblades, together with an accurate control of the cutting and feeding speeds controlled by the automation system, assure the best cutting quality, free from any burr, for all steel grades and non-ferrous materials.

The multi-head cutting machines are used as cutting areas or are installed at the exit of drawn tube production lines.

Mair Research SpA – Italy
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Website: www.mair-research.com

New range of circular saw blades

STARK has introduced the Olympic range, dedicated to tube cutting applications. The line includes circular saw blades suitable for differing applications.

For its Olympic HSS circular saw blades, Stark wanted to join the best surface coating (PVD technology) developed in its well-equipped laboratory with the HSS blade produced with the lowest tolerances. The new coating is suitable for cutting high tensile strength material and abrasive materials, and perfect for dry cutting.

Thinner cutting edge and very narrow blade manufacturing tolerances grant very low cutting efforts, higher cutting quality and longer blade life. All of the blades are individually checked and their measured tolerances included in a quality report.

This type of HSS circular saw blade is suitable for materials including carbon steel, alloyed steel with high tensile strength, stainless steel inox and also non-ferrous material. The most common applications are fly-cut machines with single or double cutting heads, orbital cutting machines (including stainless steel cutting), and automatic cut-off machines suitable for tube cutting.

Olympic TCT throw away circular saw blades are designed to meet requirements for steel's higher tensile strength values, greater tube thickness and faster production line speed. When the hardness and thickness of the material to be cut increase, it is possible to reduce machine down times using Olympic blades instead of traditional blades; according to Stark, the circular saw lasts longer while granting a faster cutting operation. The blades have a PVD surface coating for this specific application. Every blade is inspected and marked with a batch number to guarantee cutting performance consistency.

The Olympic range also includes a line of TCT circular saw blades suitable for orbital cutting machines. For cutting tubes with large dimensions using orbital cutting heads equipped with two to four blades, Stark developed a new PVD-coated, re-sharpenable blade with special tooth shape, aimed at reducing effort during cutting and achieving a longer tool life.

According to the section and the material to be cut, the company can supply different toothing geometries specially developed to obtain the highest cutting performance.

The Stark Group has a network of distributors, and four branches – Stark GmbH in Germany, Stark do Brasil Ltda in Brazil, Frund-Stark SA in Argentina, and Stark Tools (Suzhou) Co Ltd in China.

Stark SpA – Italy
Email: info@starktools.com

Dry cut metal saw for tubular, solid and angled shapes

TRU-Cut Saw, best known for its line of custom and standard carbide tipped saw blades, is expanding its product offerings to include a line of versatile dry cut metal saws.

Richard Otter, VP sales, commented, "It's a natural expansion of our business. We can offer our dry cut metal saws with a variety of blade options to meet specific customer applications."

The Model TC16DC saw is suitable for sample cutting, industrial applications and fabrication shops. The machine features a two-speed, 3hp motor, 45° left and right mitre cutting, self-centring vice, laser cutting guide and chip tray. Tru-Cut offers 12", 14" and 16" dry cut saw blades for the saw, with TiN, TiCN and AlTin coatings.

Complementing its line of dry cut metal saws, Tru-Cut offers a full range of saw blades and services, including custom and standard carbide tipped saws up to 3,050mm; segmental saws from 200 to 1,610mm; high speed steel saws from 100 to 225mm (M2, premium nitrite and M35 cobalt); new M2 and premium nitrided saws; friction saws from 600 to 1,800mm; and solid carbide saws from 100 to 180mm available from stock. The company also offers repair and regrinding services, and new and recoated coated drills, taps and milling cutters.

Tru-Cut Saw has two PVD coating chambers, with a capacity to coat blades and other parts up to 1,200mm in diameter. These state-of-the-art chambers allow the company to tightly control coating quality and uniformity, and permit adjustments for individual customer applications.

Tru-Cut Saw Inc – USA
Fax: +1 330 225 4741
Email: trucutsaw@trucutsaw.com
Website: www.trucutsaw.com

Tru-Cut 16" (400mm) dry cut metal saw

State-of-the-art circular saw blades

GEBR Lennartz GmbH KG, Germany is a manufacturer and exporter of high performance circular saw blades.

These saw blades are used for the cutting of carbon steel, alloy steel and stainless steel materials as well as non-ferrous metals.

The company has developed a special high performance carbide tipped circular saw blade for the cutting of welded pipes for a "flying cut-off" sawing machine. The important advantage is less production stop due to long life time of the new developed 'throw away' blade and in addition the costs per m^2 are reduced considerably.

The next development stage is a stationary cut-off machine with three cutting heads for cutting seamless pipes.

The advantage of this method is the fact that the pipe must not be turned as by a traditional pipe parting-off machine with turning knives.

Gebr Lennartz GmbH & Co KG – Germany
Fax: +49 291 996060
Email: info@lennartz.de
Website: www.lennartz.de

Saw technology

KAMPMANN GmbH manufactures circular saw blades for the steel and tube industry, and is internationally active with branches and production centres in Germany, France and Brazil.

Two years ago the company moved to its new plant in Hamm, Germany. This factory is equipped with a modern production line for high speed carbide tipped circular saw blades.

The product range includes carbide tipped circular saw blades; high speed steel (HSS) circular saw blades; segmental circular saw blades; friction saw blades for hot and cold cutting; and high speed steel (HSS) – DIN circular saw blades.

Kampmann has more than 80 years' experience with circular saw blades, and specialises in cutting steel with carbide tipped saw blades. The company offers customised cutting solutions, as well as a sharpening, repair and pick-up service with its own trucks, and can also provide cooling and lubricant systems in cooperation with an experienced partner.

Kampmann GmbH – Germany
Fax: +49 2385 932 85 55
Email: info@kampmann-gmbh.de
Website: www.kampmann-gmbh.de

Burr free cutoff and grinding

TRUE burr free cutoff and grinding are easily obtained on any of Everite Machine Products' unique line of electrochemical tube cutoff machines and surface grinders. By combining the stress free principles of electrochemical dissolution of metals with the precision of abrasive grinding, fast, clean, accurate and burr free cuts are routine.

Almost any conductive material can be cut effectively with electrochemical grinding or ECG. Material hardness and machinability have very little impact on cutting speed or tool life. The process is quite simple – low voltage, high current DC power is applied between the conductive grinding wheel (the cathode) and the workpiece (the anode), with an appropriate electrolyte solution flowing to complete the electrochemical cell.

The material begins to oxidise allowing the abrasives in the grinding wheel to cut with very little heat or stress and, therefore, no burrs. This technology has been widely used to cutoff hypodermic needle, cannula and other medical related products. Tube processing and fabricating companies in many other industries such as aerospace, chromatography, automotive, nuclear, semiconductor and heat exchangers have found the burr free, stress free advantage of ECG to be an advantage in reducing labour while improving process capability.

ECG is most commonly used on stainless steels and high temperature alloys but almost all metals can be quickly and precisely cut without burrs using the ECG process. ECG is also ideal for thin wall, fragile and thermo sensitive metals.

The Everite SR8 is the latest in the line of tube cutoff machines. This heavy duty servo controlled machine with an easy operator interface is ideal for fast, precise, burr free cuts.

Everite Machine Products – USA
Email: info@everite.net
Website: www.everite.net

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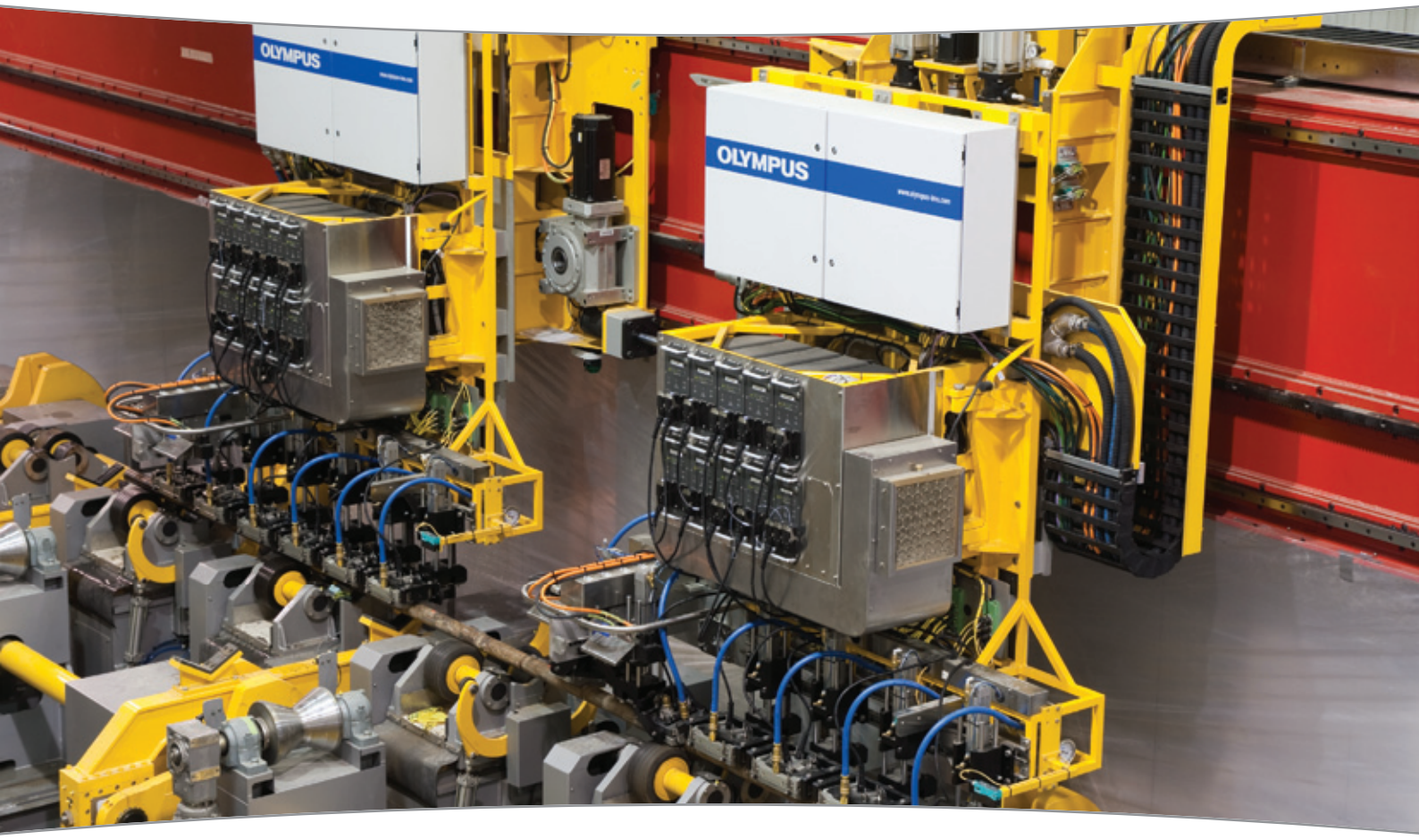
Your Vision, Our Future



FULL-BODY AND ERW TUBE INSPECTION SYSTEM

Nondestructive Phased Array Solution

This hybrid inspection solution uses phased array technology to control the full volume, the weld seam, and the heat-affected zone (HAZ) of ERW tubes and pipes, and is fully compliant with the latest API requirements for P110 and Q125 grades.

- A "hybrid" solution providing combined weld-seam and full-body inspection.
- Untested lengths as short as 5 mm.
- Multiple oblique angles.
- Special algorithms for defect sizing.
- Wide sector coverage of the weld seam and HAZ with constant amplitude (eliminates the need for weld tracking).
- Automatic radial positioning of the probe.
- Multiple inspection-mode capability using the same PA probe (45°, 60°, 70°, 45 tandem, etc.).
- Optimized detection of ID, mid-wall, and OD defects.
- Automatic weld location.

NEW

FOX-IQ

XRF Tube and Rod Alloy Analysis System

The FOX-IQ is an easy-to-integrate and easy-to-use system that performs automated online QC analysis for 100% high-volume nondestructive process control.

- Leaves no marks on the material after testing.
- Completely automated XRF alloy analysis with alerts and data logging.
- Compact design fits into most existing operations.
- Durable, proven, and reliable.

Proven Performance

High Speed Inspection Systems

Design | Fabrication | Installation | Training

EMI – Amalog®, Sonoscope® | UT – Truscope®, Truscan® | Wall Measurement - Truwall®

CRACKS | ECCENTRICITY | WALL REDUCTION | LAMINATION | ROLL IN SLUGS

Since the first mill installation in 1966, NOV® Tuboscope remains the premier provider of Tube, Pipe Mill and End Finisher Inspection Equipment. With over 200 installations worldwide, Tuboscope systems continue to increase production and profitability with reliable performance.

Offering a full turnkey package - custom designed and fabricated to meet rigorous inspection standards:

- ***High Speed UT and EMI***
- ***Centralized Reporting***
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NOV Tuboscope – Designed and Engineered for Proven Performance

www.tuboscope.com

NOV Tuboscope

Email: tuboscopesales@nov.com

New force in Europe for saw blades

FABI Holding AG is an international, family owned industrial enterprise founded in 1999. The company has developed through start-ups and selective acquisitions, based on innovation, production and sales of metal saw blades.

FaBi Holding includes SW Wil AG and OWT AG (both in Switzerland), Kampmann GmbH (Germany), Kampmann France SARL (France), Urban-Sägen GmbH (Austria), SW Wil – Kampmann (Italy), and SW Wil-Gent (Macedonia). The group also includes ProTube Ltd in Australia and Dezzo-SPT Ltd in South Africa.

In a total production area of over 11,000m^2, advanced, powerful HSS- and TCT saw blades are produced. The company has its own heat treatment shop, with several metallurgists, and development engineers for saw techniques.

SW Wil Werkzeug- und Maschinenhandel AG – Switzerland
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Website: www.sw-wil.com

Shear cut-off

THERMATOOL Corp has announced the sale of an Alpha Mach 3 flying shear cut-off to Fintube, LLC in Tulsa, Oklahoma, USA.

Fintube LLC specialises in internally enhanced HF welded tubing for boilers, heat exchangers and other applications requiring high strength alloy tubing. The Alpha flying shear cut-off can double cut, dimple free, up to 5" OD tube with a wall thickness of up to 0.22" in this application. Alpha flying shear cut-offs provide high mill speed cutting without creating swarf that requires subsequent ID cleaning or rinsing.

Fintube's Alpha was selected for its ability to perform up to 50 cuts per minute while holding close tolerance cut lengths of less than ±0.039". This allows the company to produce cut-to-length tube directly off the mill for many orders, while reducing secondary material handling and lowering inventory. Fintube will be able to ship product to its customers efficiently.


Alpha Mach 3 flying shear cut-off

Thermatool Corp – USA
Website: www.thermatool.com

Fintube, LLC – USA
Website: www.fintubellc.com

Blade for cutting stainless thin tube

DEMAND for sawing with a high speed is increasing and for standard steel tube, sawing at three times faster cutting speed (Vc=300m/min) than conventional processes is becoming popular. Kanefusa has been supplying TCT saw blades that meet such requirements.

Stainless steel – always a difficult-to-cut material – heats saw blade edges, which considerably decreases service life of saw blades.

Therefore, it is difficult to increase cutting speed with a conventional saw and it is common to cut stainless steel tube at slow cutting speed (Vc=60m/min).

This is due to the features of stainless steel such as low thermal conductivity, adhesion, and work hardening. Especially for cutting stainless tube, swarf inside pipe bitten by blade edges cause edge chipping and shorten cutting life of TCT saw blades. Therefore, it has been common to use a HSS metal saw blade to cut stainless tube instead of TCT saw blade.

In answer to the increasing demand for fast cutting of stainless tube, Kanefusa has announced a newly developed TCT saw blade named 'Ferro Max SUS Tube' for stainless thin-wall tube with unique technology.

Some of the product features include: special tooth configuration and edge quality with an original coating; up to ten times longer service life compared to conventional saw blade (Ferro Max Tube); a new gullet design prevents big burrs from getting into the gullet for a long and stable service life; cutting lubricant for stainless steel is strongly recommended for the maximum performance of Ferro Max SUS Tube.

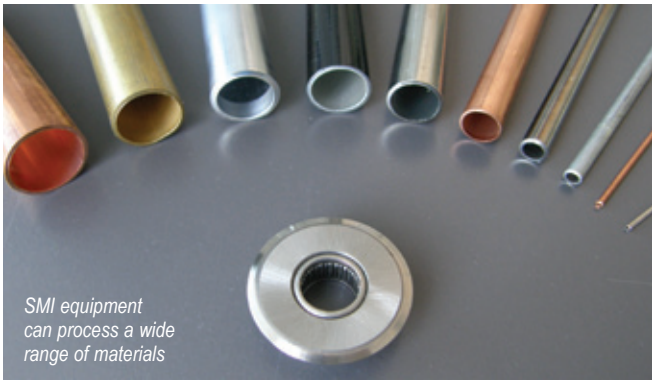
Kanefusa claims that Ferro Max SUS Tube improves productivity by 50 per cent and achieves three to five times longer cutting life than conventional HSS metal saw blades.

For those who are interested in improving productivity on cutting stainless thin tube, Kanefusa recommends its newest TCT saw blade, Ferro Max SUS Tube. The company will be happy to suggest an appropriate saw blade size and cutting parameter on your machine for kind and size of work material.

Kanefusa – Japan
Email: t-isogaya@kanefusa.co.jp
Website: www.kanefusa.net

Burr-free and chipless orbital cutting

THE SMI Group (Sistemi Meccanici Industriali Srl), whose head offices are situated in Varmo, Italy, has been actively involved in the tube processing industry for more than 30 years, designing and manufacturing a range of machines capable of transforming tubes made from copper, aluminium, stainless steel, titanium, cupronickel, bundy, PVC, PE, PPL, PA, PVC metal coated, and steel-wire-reinforced plastics, from coils into 3D components.



SMI equipment can process a wide range of materials

To ensure a good quality cut, SMI has registered two international patents for a complex cutting process that involves innovative software and the use of hi-tech metals with specific thermal treatment. Using this technology, SMI's cutters are able to cut tubes with diameters varying from 1 to 40mm.

Synthetically, the cutting process starts with a deep groove made around the circumference of the tube by means of a 25 or 38mm knife that rotates around the tube. Two pneumatic clamps firmly catch the tube on either side of the groove, and separate it by a pull-apart system or a break-off system.

A burr-free and chipless cut, maintaining the tube's inside and outside diameter, is obtained by a number of easily adjustable parameters such as the knife's penetrating speed, the depth of the groove, the cutting advancement speed, the clamping and pull-apart or break-off system, speed and pneumatic power applied.

Cutting technology from SMI

SMI's latest research is based on an innovative technology: the orbital cutting of irregular shapes. This technology has been developed and introduced to the market with the supply of a completely automatic working cell. Coiled copper tubes of up to 26.5mm diameter are transformed into cold-roll-formed T-shaped tubes, which are orbitally cut to the desired length, again without burrs, chips and dust.

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Plasma cutting machine

SMS Engineering manufactures and sells tube cutting machinery. Its machines perform all finishing operations on metallic tubes using hydraulic units, similar to small presses, which when linked to a hydraulic power pack and positioned on a steel surface such as a rig or a plate, can punch, flatten, swage (reduction of the tube ends) and cut the tube.

The tube and, consequently, all its machining, cover a wide range of fields: it can be found in baby articles production (perambulators, push chairs, school desks), home appliances (clothing dryers, domestic ladders, heaters, radiators), building production (scaffolding), automotive production (car safety bars, seat adjusting levers, head rests), leisure time (swings, deckchairs, camper accessories, tents), garden items (grass cutters, wheelbarrows), and furniture (chairs, shelves and office furniture).

The machine working is provided through the manual feeding of the tube, which is closed by the gripper, and then by pressing the start cycle.

The machine makes all the operations and the finished tube comes back to the starting point where it is unloaded.

Using this machine you can work bars of 3m in length with the possibility of cutting the tube. The machine can be supplied in a number of ways to suit the customer and can be completed with automatic loading/unloading with the possibility of working commercial bar length of 6m.

The machine can work up to Ø120mm round tubes and square/rectangular tubes maximum 80x80mm, with or without deformation in steel, stainless steel and aluminium.

The machine is as accurate as a laser machine, but it requires lower investment. The best advantage of the plasma machine as regard to the traditional punching machine is that you can program it and avoid the exchange operation of the toolings and corresponded costs for each different mould: different shapes of holes and hole slots can be performed on the same tube.

The plasma-cutting machine is very easy to use. In order to program it, you must be acquainted with the CAD-CAM systems but just a short period of training is required. The machine is suitable for manufacturers of shelving, radiators, stairs, bed nets, ladders, parts for cars, furniture and similar tube products for different sectors.

SMS Engineering Srl – Italy
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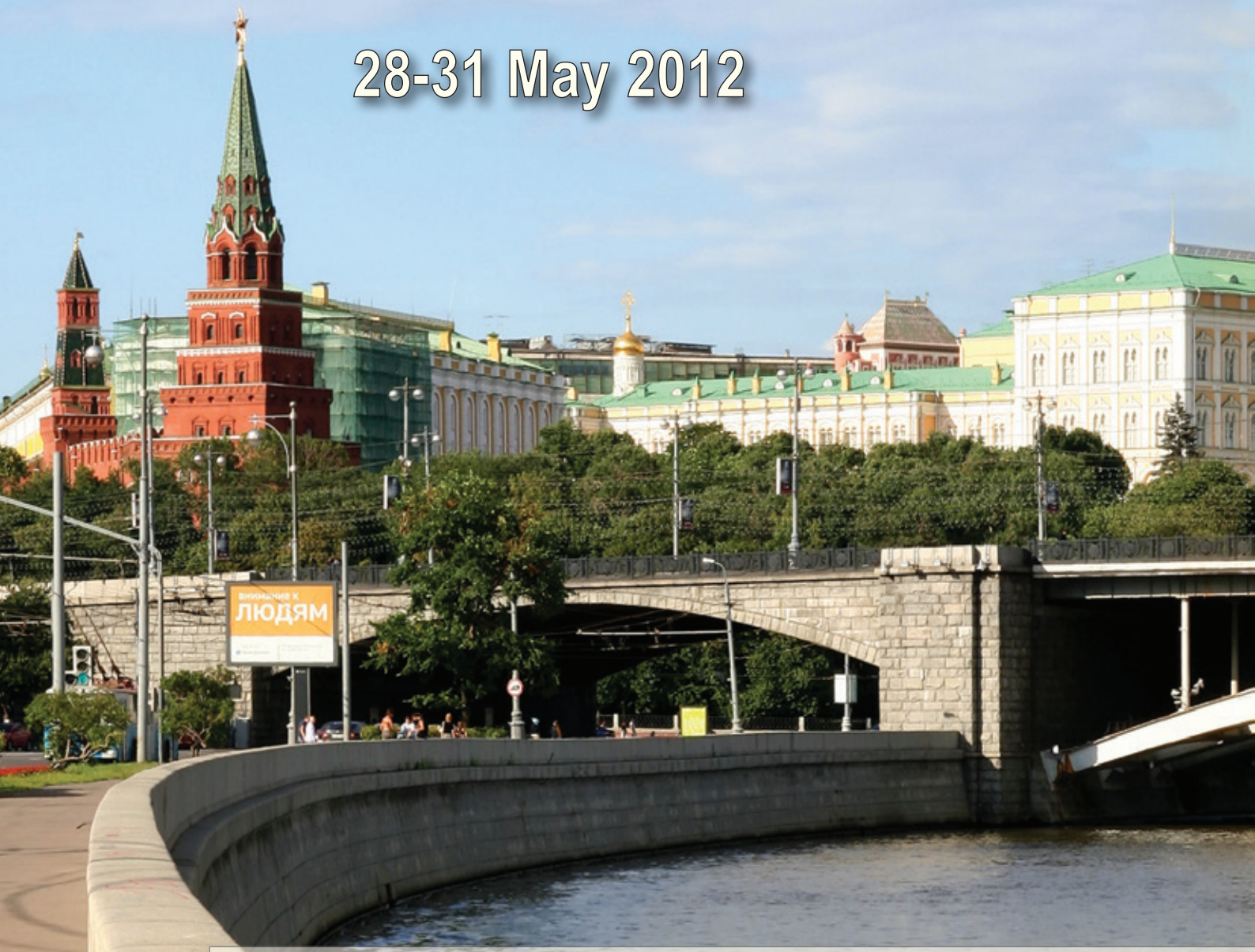
Website: www.sms-italy.it

Tube Russia 2012
Metallurgy-Litmash

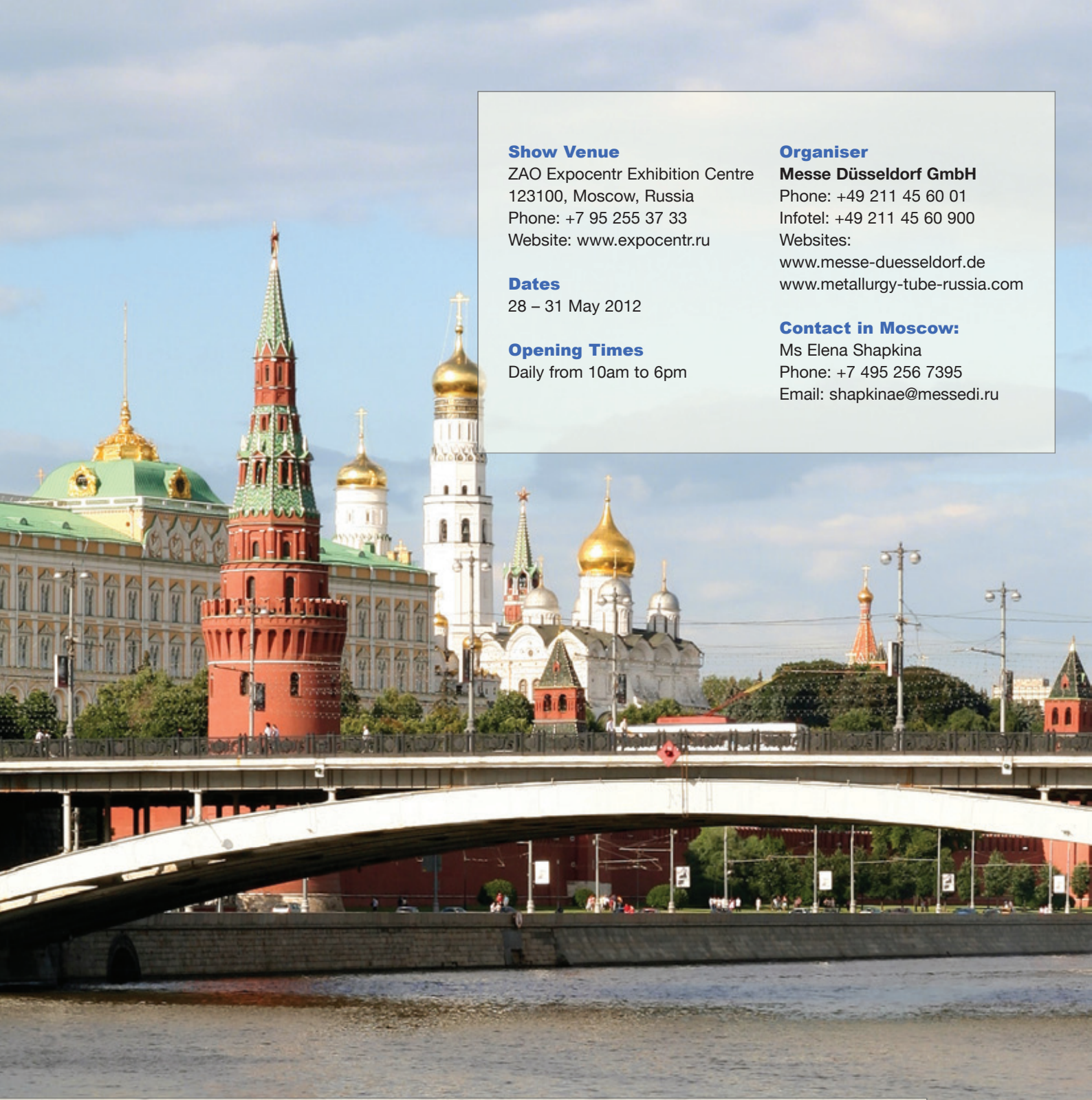
28-31 May 2012



Economic conditions for the trade fairs Tube Russia, Metallurgy-Litmash, and Aluminium/ Non-Ferrous, to be held from 28 to 31 May 2012 in Moscow, are improving. Despite an extremely difficult economic environment over the past few years, the industry is now looking to the future with a fair amount of optimism thanks to the constantly improving investment climate in Russia.

Well-known exhibitors such as TMK Russia, OMK Russia, Danieli, Elmaksan, Heinrich-Wagner-Sinto, Laempe Mössner, Künkel Wagner, Paul Wurth, Oskar Frech, Siemens VAI, Foseco and the SMS-Group have already secured their place at the Expocentre Fairgrounds in Moscow. In 2011, 265 exhibitors from 24 countries showcased their exhibits.

According to Germany Trade and Invest, Russia's economy saw better growth in 2011 than in the previous year, after some initial problems. Without excessive sovereign debt and thanks to abundant revenue from raw materials, Moscow looks to the future with optimism. For the coming years experts expect growth rates to reach 4%.



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Dates
28 – 31 May 2012

Opening Times
Daily from 10am to 6pm

Organiser
Messe Düsseldorf GmbH
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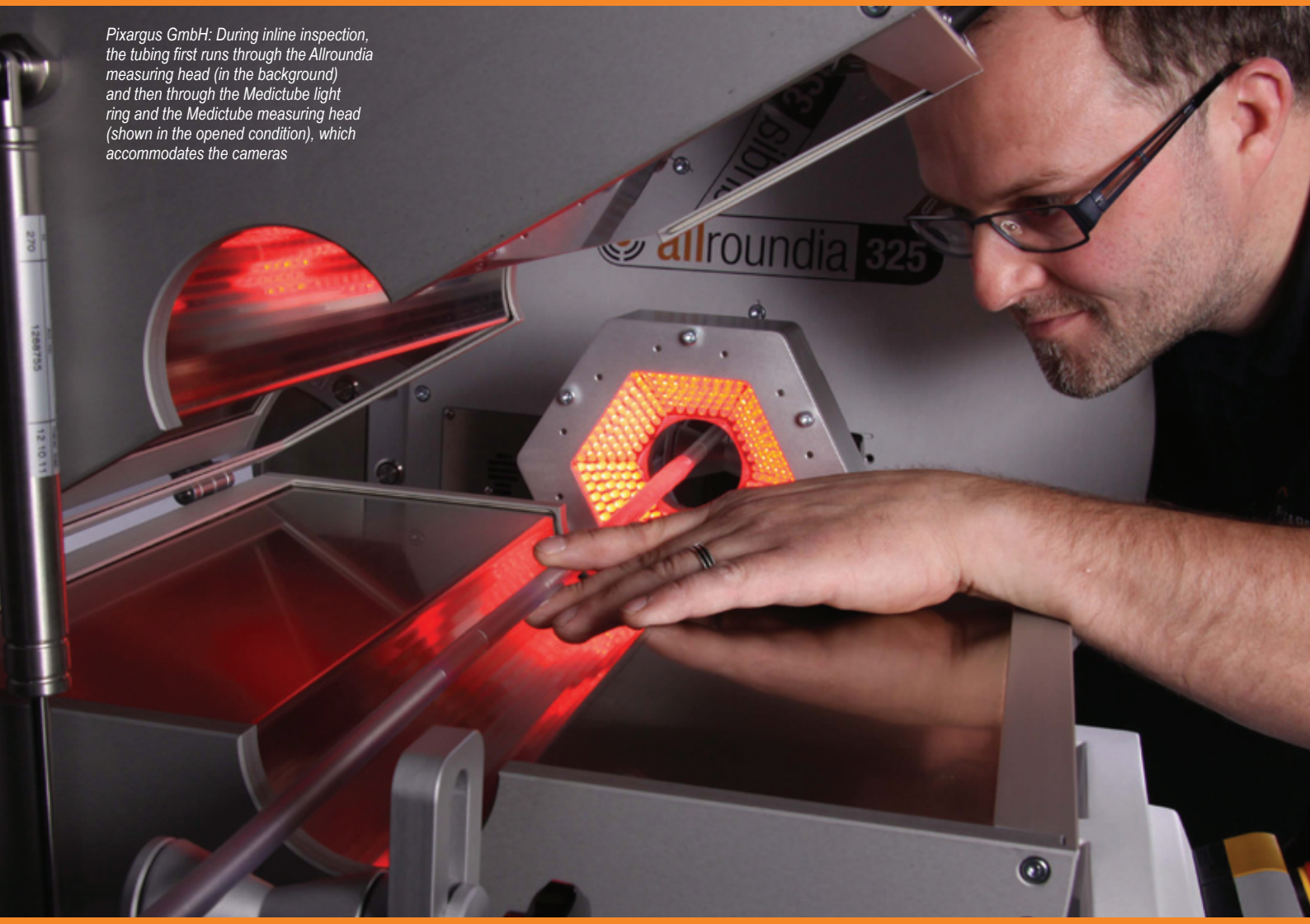
Investment activities are up, the construction sector is picking up speed again, and consumption remains a strong pillar of this upswing. The trade fair duo is one of the most important trading and contact platforms in Russia and for the neighbouring states. The organisers are aware of the optimism prevailing in the industry and can now already see a positive trend in exhibitor registrations.

Messe Düsseldorf GmbH, Messe Düsseldorf Moscow OOO and its Russian partner Metal-Expo have secured official participations from Germany, Italy, Austria and China. The trade fair is supported by the leading international industry associations AMAFOND – Italian Association for Foundry Machines and Products, ITA – International Tube Association, VDMA – German Engineering Association, EUnited Metallurgy – The European Metallurgical Equipment Association, CEMAFON – The European Foundry Equipment Suppliers Association, and CECOF – The European Committee of Industrial Furnace and Heating Equipment Associations, as well as by the important partner MC-CCPIT – Metallurgical Council of China Council for the Promotion of International Trade.

Inspection, testing and quality control



Pixargus GmbH: During inline inspection, the tubing first runs through the Allroundia measuring head (in the background) and then through the Medictube light ring and the Medictube measuring head (shown in the opened condition), which accommodates the cameras

Producers of tubes for medical uses face strict government and industry regulations that hold them liable for lapses in quality. To ensure proper thermal shrink ratios, manufacturers of heat-shrink tube must extrude consistent wall thickness – and certify those thicknesses. Tube makers to the automotive industry must provide product that holds tight tolerances, together with thorough documentation as proof. Plastic tube manufacturers, even as they meet challenges as diverse as the markets and customers they serve, are under a concomitant obligation to substantiate their claims for the safety and serviceability of their products.

Inspection, testing and quality control generally represent high investment, but it is an outlay that the seasoned operator in today's highly competitive tube and pipe market will not begrudge. These are specialities that come at a price – and justify every penny of it.

Hybrid inspection system checks material and contour at the same time

AT Medtec 2012, Pixargus will introduce its all-in-one solution for optical inline inspection of medical tubing. Being a dual-head system, it combines the new Allroundia system for fast and precise inspection of the tubing contours and the proven Medictube system for checking the material walls for irregularities such as inclusions or bubbles.

In the past, tubing material could only be checked offline on a random basis or manually, involving a high degree of uncertainty. Now, with the new system, it is possible to inspect the complete material in real time during production. The system automatically sorts out any flaw material, relieving the operators in their final inspection activities.

According to Björn Lindner, managing director of Pixargus, the new dual-head system provides major benefits for both manufacturers and users of tubing: "Using this new solution, our customers can now at the same time check the interior of the tubing material – for bubbles, holes, cracks, impurities or inclusions – and measure the outside contours by a multi-axis system. This guarantees that only perfectly flawless material is sold."

Medictube detects bubbles, holes or inclusions in the material. The new integrated pattern-recognition feature now also identifies structures inside the tubing material, such as spirals embedded in semi-transparent, shape-retaining suction hoses. The system checks the shape of the spirals and triggers an alarm as soon as deviations are identified.

Allroundia for the first time combines the functions of a "high-speed node controller" with those of a "high-precision diameter and ovality inspection system" into one reasonably priced device. The system measures the outside contour of the tubing in three axes and performs diameter and ovality inspections with an accuracy of 1 to 2µm at a rate of up to 36,000 measurements per second.

Pixargus GmbH – Germany
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Website: www.pixargus.de

Industrial ultrasonic systems

TECHNOLOGY Design manufactures and supplies advanced industrial ultrasonic systems. Based in the UK with a manufacturing base in Cheshire, and with distributorships worldwide, the TD range of systems may be found in a wide range of engineering sectors, including aerospace, defence, education and research, manufacturing, mining, oil and gas, power generation and transport.

The TD Pocket-Scan® miniature acquisition unit is available in two versions, providing eight connections for ToFD and pulse echo, and literally fits into a pocket. It is remotely controlled by a laptop computer via either a PCMCIA card (PS) or Ethernet (PS45). The Pocket-Scan is widely used for corrosion mapping and hydrogen damage surveys as part of the TD Corrosion Mapping Kit, which employs video tracking technology instead of contact encoders. It may also be used for a variety of other applications and has 2-axis positional encoding capability.

TD Handy-Scan® is a multi-functional instrument that boasts 64:32 element phased array and eight ToFD/pulse echo connections with 2-axis encoders. The Handy-Scan is fully integrated with on-board PC and ultrasonic electronics with an 8.5" screen in a portable enclosure weighing less than 6kg. In addition, the Handy-Scan Rx is designed to environmentally protected IP 65 standard, with a bright, daylight-readable screen. Battery or mains supply operated, the portable instrument is suitable for use in access-restricted locations.

The Handy-Scan can be used with phased array, pulse echo and/or ToFD simultaneously and is supplied with the ESBeamtool® ray tracing software pre-installed. Scan plans and setups developed in ESBeamtool can be imported directly into the TD-Scan software, which provides an extra level of versatile functionality.

TD Focus-Scan® is the flagship system in the TD range of instruments, and is available is several versions: 16 conventional probe connections for ToFD and pulse echo with either 64:32, 128:16, 128:32 or 128:64 phased array. The unit can also be supplied as a 16 channel ToFD/pulse echo system without phased array called the TD-Scan. This option is suitable for users on a tight budget who need capacity and motion control but also the option to upgrade later. Additional facilities include on-board 2-axis motor control and positional encoding, pre-installed ESBeamtool, split phased array connectors to accommodate both sides of a weld simultaneously, large built-in 10.5" screen, full QWERTY keypad with shortcut keys, and four USB ports.

Both the Handy-Scan and Focus-Scan include Ethernet, USB and VGA ports. The systems can be fully controlled remotely via an Ethernet link, which facilitates placing the UT electronics at the workface and establishing a remote control station – a popular solution in manufacturing environments and AUT applications. The systems may be used to establish scan plans on simple or complex geometries. The setup parameters and test item geometry may then be exported directly to TD-Scan software.

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Safer high voltage porosity detection

FOLLOWING three years of intensive research and development to make pulsed DC holiday detection safer, easier and more reliable than ever before, Elcometer is pleased to report on its new Elcometer 280 Pulsed DC Holiday Detector.

Using state-of-the-art electronics to safely generate the required high voltage DC pulses, the Elcometer 280 detects holidays in coatings without the need to ground the gauge to the substrate – ideal for pipeline, and large surface, porosity inspection.

Fully charged in 4 hours and weighing only 3kg (6.6lb), the Elcometer 280 can provide up to 30 hours of continuous use.

Rugged, shockproof, water resistant and incredibly safe: with its two stage safety switch, bright LEDs, screen icons and buzzer signifying when the high voltage is on, extended ribbing to protect the user from spark creep, and much much more, the Elcometer 280 raises the bar in safe pulsed DC porosity detection.

Users can either set the test voltage manually or can let the internal Voltage Calculator automatically set the gauge to the correct voltage required for their coating thickness value.

Supplied complete with 2 rechargeable battery packs (and charger), 5m (16ft) trailing earth lead, rolling spring holder and 250mm (9.8") extension rod; just select the appropriate probe electrode from the comprehensive range of accessories to suit your application.

The Elcometer 280 Holiday Detector Inspection Kit is supplied in a rugged, light weight wheeled transit case, designed to hold up to 6m (30ft) of stainless steel or up to 20m (66ft) of phosphor bronze rolling spring – ideal for easy transportation to site.

The Elcometer 280 Pulsed DC Holiday Detector complements the wide range of high voltage holiday detectors, low voltage and UV pinhole detectors available from Elcometer.

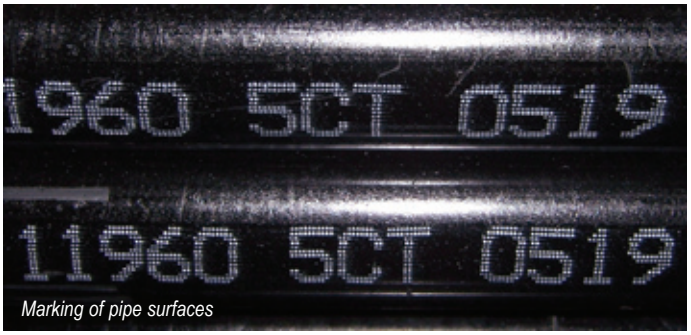
Elcometer – UK
Website: www.elcometer.com

Measurement and marking equipment for steel pipe

QINGDAO Rising Machine & Electric Technology Co Ltd provides equipment for weighing, length measurement and marking of pipe, as well as colour band equipment, drifter machines, and machinery for spraying paint on steel pipe surfaces during seamless steel pipe, straight seam steel pipe and oil pipe production processes.

The equipment for weighing and length measurement marking for steel pipe is mainly composed of a weighing device, length measurement device, spraying code equipment, marking equipment, colour band equipment and an electric automatic control system. Some users can increase or decrease the devices to meet their own requirements, such as before steel pipe packaging, the need to detect and mark steel pipe according to API standard requirements. The main purposes are: to measure steel pipe bar by bar, to judge whether it is qualified (whether the pipes' length, wall thickness and weight are matched, and whether the length scope is qualified); to facilitate production statistics and determine total length, weight and number of various specifications of pipes; to mark the steel pipes' grade with different colour bands; and to mark the pipes' manufacturer, standard, heat number and production date on the pipe surface.

The steel pipe drifter machine is mainly used to detect pipe's straightness, passing from one end of the pipe to the other with a standard drift diameter gauge. The equipment is mainly composed of frame, feed gauge device, launch gauge device, conveying system and receive gauge device.



Marking of pipe surfaces

The steel pipe spraying paint machine is used for anti-corrosion of pipe surface, to avoid rust during transportation and storage. The working process is to move the steel pipe on the spraying vertical conveyor, and uniformly pass the outer wall spraying device carrying the pipe at a certain speed. When the spraying device detects the workpiece and marks the diameter, the automatic spray gun will open and automatically spray the workpiece's surface. The spray gun automatically shuts off when the workpiece moves out of the spraying station.

During the spraying process, overspray is collected by a recycling hopper and flowed into a recycling tank. The recyclable paint is reused after being filtered. Through the mist and waste gas processing systems, the distributing mist and organic waste gas during the spraying process are exhausted outdoors by fan.

Qingdao Rising Machine & Electric Technology Co Ltd – China
Fax: +86 532 55662603
Email: qdrx@sohu.com
Website: www.qd-rising.com

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Self-aligned scales with magnetic technology

GIVI Misure, a producer of optical scales, rotary encoders, magnetic scales, digital readouts and position controllers, has introduced a new model of self-aligned scales, based on magnetic technology. The scales are available in two versions: an incremental version with TTL push-pull or line driver signals (MTT), and an absolute version with CANopen protocol (MTB). Both versions are mechanically (and electrically, in the case of the MTT) compatible with the optical scale PBS-HR.

Givi Misure's MTB and MTT scales

The accuracy of the measuring system is verified in rigorous environmental and climatic conditions and documented in the certificate of metrological inspection, and it is such to guarantee an error lower than ±15µm and a repeatability of ±1 increment. Both versions offer resolutions up to 1µm.

The electronic circuit is protected against inversions of polarity and short circuits. The reference indexes are placed all over the measuring length, at a constant step of 10mm, and are activated by the zero magneto set, which slides along the scale. The cable is suited to continuous movements and its output is adjustable.

MTT and MTB scales are symmetric, simplifying the purchasing process and stock management. In the case of use on press brakes it is sufficient to orientate the cable output and to properly position the zero magneto set, to make the same scale applicable to both right and left columns of the press brake.

Both versions have an IP67 protection class, and are therefore suitable for applications in environments characterised by the presence of dusts or liquids. MTT and MTB magnetic scales are manufactured in Italy, at the Nova Milanese production plant, and all of the products have a two-year warranty against manufacturing defects.

Givi Misure Srl – Italy
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Website: www.givimisure.it

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Meet us Hall 1
Booth C10

Redefining ultrasonic field inspections

INSPECTECH Analygas Group, Canada, has manufactured customised NDT solutions for the tube and pipe industries for more than 30 years. The company is always exploring new technologies and innovative ways to meet customers' ever-evolving NDT requirements.

Recently, a portable ultrasonic "crab" inspection system was manufactured and commissioned for Tejas Tubular Products Inc's casing facility in Houston Texas. The crab was made to inspect the weld-lines of finished tubes used for oilfield casings and line pipes, inspecting to API-5L and API-5CT standards.

InspecTech's UT crabs were developed from the success of the on-line inspection predecessors, not from common and limited hand-held UT devices. These crabs operate with the same ultrasonic principles as InspecTech's online inspection units, utilising focused transducers designed specifically for inspecting tube and pipe in a water column effect. The electronic cabinet and coupling liquid tank are connected to the crab via a 100ft services umbilical.

The crab also comes with audible and visual alarms to notify the operator of detected anomalies in the OD and ID locations independently.

InspecTech Analygas Group Inc – Canada
Email: sales@inspectech.ca
Website: www.inspectech.ca

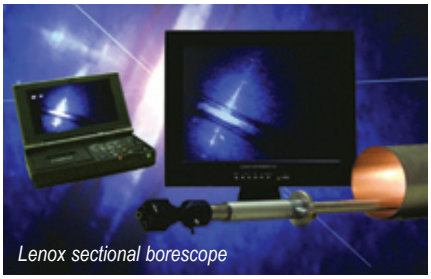
Ultrasonic inspection

PAN American manufactures the ultrasonic IRIS tool, which was developed by Shell Research to inspect air fin cooler tubes for corrosion. The system accurately measures wall thickness from inside the tube or pipe, identifying changes in the inside and outside wall, dents and similar features. The instrument was rapidly expanded to cover most heat exchanger and boiler tubes found in the petro-chemical and paper industries. It is commonly used in tubes ranging from 10 to 75mm diameter and can measure wall thickness in ferrous and non-ferrous materials.

Recently, the tool's inspection range and applications have been significantly expanded. Vertical downhole pipes as well as cased (pipe in pipe) applications up to 400mm diameter and depths of 700m are now being inspected. Inspections in horizontal pipe with diameters up to 1,200mm are performed in pipelines up to 5km long.

Pan American Industries – USA
Email: jimyukes@panamiris.com
Website: www.panamiris.com

Extendable videoborescope for visual flaw detection


Lenox sectional borescope

LENOX Instrument Company's extendable rigid Videoborescope with enhanced digital recording capabilities is a rugged, high performance sectional, extendable borescope that delivers image quality in long, straight visual inspection applications.

The available colour video mini camera attaches to the borescope's eyepiece to produce crisp, clear, high-resolution images, which can be viewed and recorded on a mini-digital MP4, 20GB hard drive video recorder/player with a high-resolution 7" display, enabling advanced inspections and before-and-after comparison and analysis.

Lenox extendable borescopes are versatile instruments used to inspect internal surface areas in tubing and pipe, vessels and chambers, hydraulic cylinders, heat exchangers, power generation equipment, process lines and other applications.

The Videoborescopes are modular in design and allow the user to add extender sections to provide working lengths up to 36.6m (120ft). The borescopes are available in diameters of 23, 35, 45 and 70mm, and deliver uncompromising image resolution to allow identification of flaws as small as 0.0127mm (0.0005").

Viewing heads include right angle, bottoming, retrospective, forward oblique and circumference head, which is designed to allow for rapid inspection of tubing or other cylindrical shaped structures, projected forward to view the wall at slanting incidence so a 360° band, several inches wide, can be seen at a glance. A centrally located mirror provides a right angle view for more critical examination of the area just scanned by the panoramic view as the borescope is advanced.

Lenox sectional, extendable Videoborescope borescope systems with added digital recording capabilities are a viable alternative to labour intensive videoscope systems and, for many applications, offer users the advantage of being able to inspect large surface areas in less time. Each Lenox extendable borescope is backed by a two-year warranty.

Lenox Instrument Company Inc – USA
Fax: +1 215 322 6126
Email: sales@lenoxinst.com
Website: www.lenoxinst.com

Ultrasonic end test system

A NEW ultrasonic end test system that fulfils ultrasonic and electromagnetic API requirements for end testing of tubes for flaw, lamination and wall thickness has been introduced by Magnetic Analysis Corporation. In many mills, inspection systems are not able to test to the very end of a tube. This requires the untested tube end to be cut off, resulting in a substantial loss of product and revenue. MAC's new UT end tester provides a solution to this problem.

The Echomac® UT end tester consists of two independent, identical, test stations designed to inspect up to the first 500mm from each tube end, depending on the application. The tube is fed into one of these test stations where a tracking cone is inserted into the tube end, the tube is spun, and the end is inspected.

The end plug cone tracks with the rotating tube and keeps the couplant out of the tube interior to prevent interference with the test signals. The tube is then transferred to the second test station where the other end is scanned. The stations each include Echomac® ultrasonic instrumentation with up to 10UT elements, housed in a transducer box that contains the water couplant and follows the tube surface, as it is being spun.

Included are multiple ultrasonic transducers for circumferential shear wave testing in each direction and/or a transducer array as required by the application, one normal beam for wall thickness and lamination testing and two elements for upstream and two for downstream transverse shear wave testing.

Four wheels mounted on the transducer box have an innovative automatic pitch control (APC) feature, which provides accurate contact with the tube surface to maintain a constant distance between the transducers and the surface, eliminating adjustments of shear wave transducers and keeping dimension changeover time to a minimum.

The follower wheels also automatically skew to achieve the proper angle to conform to any helical pitch and eliminate any force between the transducer box and the roll assembly. MAC recently shipped an end test system designed to inspect up to 275mm from the end of seamless steel tube with a size range of 38 to 170mm diameter.

This system was customised for this application, but the test area could be longer or shorter, depending on the length of the uninspected end.

The floating transducer box and APC feature may also be adapted for use with existing mechanics that rotate the tube as it is moved past a single test station. Another possible use for this feature may be in eddy current and flux leakage applications.

Magnetic Analysis Corp – USA
Email: jgould@mac-ndt.com
Website: www.mac-ndt.com

Effective support for the longevity of pipes

EVERY company is looking for ways to reduce the damage that is caused by corrosion. A natural process yet unrequested and with a global annual footprint of billions of dollars.

Therefore protective and resistant coatings applied during pipe manufacture as well as manually on site are the tool of choice not only for standard steel pipes.

Yet this thin shield against mechanical and chemical attacks you wish to rely on for years needs your utmost support by a careful and professional check for cracks, pores or other damages.

That's when the ISOTEST® holiday detector systems come into play. A concluding check of the protective coating using high voltage impulses can provide the certainty that all unprotected spots, which are consequently targets for corrosion, are detected no matter how small.

What you are looking for is a reliable method to find material defects such as pores and cracks, other mechanical damage and the results of handling errors in applying the coating material.

The testing of coverings and coatings with NDT devices that make use of pulse-type high voltage technology has been introduced worldwide due to its many advantages.

ISOTEST® test equipment based on that pulse-type high voltage technology has the required safety margin that can still keep the chosen testing voltage even when facing rough conditions and growing pipe diameters.

Two major components are important in this context: the built-in sphere gap, which stabilises high voltage permanently, and powerful and automatic regulation of the test voltage, which guarantees that even under demanding test conditions such as having moisture on the surface, the voltage is adjusted to the set value in a fraction of a second.

Yet even the strongest performer can be upgraded with the matching accessories. The company starts off with a spiral electrode, which is literally doing an all embracing job if the pipe is still lying or hanging freely. In that case the test can be done in one single step – around the complete circumference of the pipe. This is also the easiest and quickest way to test longer sections of pipes.

If the pipe has already been laid in the trench, the half-round brush is a suitable alternative. This is the easiest and quickest method when there is a longer section ahead.

In addition to electrodes for the testing of the outer circumference where you are generally facing the more robust type of coating, there are various types for thin or delicate coatings. In these cases the metal brush set is replaced by a special type of conductive rubber. A further alternative may be an electrode for the testing of the inside of the pipes combining stainless steel and nylon bristles.

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Monitoring of precision welding

MOST open arc welding processes, regardless of the technology used, generate an extremely bright light source at the tip of the weld torch that makes proper monitoring and control of the weld process difficult. A view of the environment around the weld arc is important to ensure that the weld arc is properly sized and aligned with the work pieces it is welding. It is also important to monitor the weld seam and pool after the weld head to make sure that they are properly formed during the welding process.

In a manual welding process, an operator uses a weld mask with extremely dark filters to attenuate the light from the weld arc sufficiently to provide detail of the light tip. However, this is not possible for an automated welding cell. Instead, an adaptive camera based system that can properly image the very bright weld arc when in operation, while still being able to see the background areas around the weld, would be of great assistance to the welding industry for automated welding cells.

Typically a weld arc might be as much as 10,000,000 times brighter to a camera than the metal area around it. Such a large range of light requires special technology to be applied to see the bright areas of the weld arc while still seeing the darker areas in the background.

Early attempts at solutions demonstrated that camera systems can monitor and record the welding process. However, generic CCD sensor technology does not allow for reliable evaluation of the welding process due to over- or under-exposure of the weld environment. Typical solutions involve closing the camera aperture down to only see the weld arc while making the background completely black, or opening the aperture large enough to see the background clearly while making the area of the weld arc super saturated, causing all definition to be lost.

Very wide dynamic range cameras have been developed that are capable of imaging about 140-150dB range of brightness (or a ratio in excess of 10,000,000:1 of the brightest pixel to the darkest pixel), whereas most existing cameras are capable of only 50-60dB (about 1,000:1).

A camera that is able to accommodate the entire range of light found in a welding environment could be used as a set up tool, a quality control tool or process control tool, resulting in production cost savings and reduced defects in the finished welded product. While all types of welding processes can use such technology, automatic welding systems especially benefit, as they are typically too congested or dangerous to have an operator directly monitor the welding process while under operation. In such cases, a camera mounted at the welding arc with a remote monitor allows the operator to view the welding process remotely, improving productivity while minimising health and safety issues.

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Thermal field seam evaluation

TUBES that seem to be completely physically correct can fracture in use. The reason for this, especially in ERW welding processes, is too low or too high heat input or material faults. Commonly used eddy current or ultrasonic systems are limited in detection of such errors.

The evaluation of seam quality by using its thermal field opens up new possibilities. Even penetration faults or seam asymmetry can be recognised in the running production, and every inch of the tube is controlled and documented. The ThermoProfileScanner (TPS) from HKS-Prozesstechnik makes this possible.

Operation next to the welding spot is possible through a glassless, gas purged and water cooled construction. From the recorded thermal data the welded seam's basic parameters are calculated. The threshold is freely adjustably and therefore adaptable to the respective process. The basic parameters like seam position, width, symmetry and temperature are the base to recognise such weld defects as lack of fusion, cold welds, pores or seam offset.

The TPS measures the infrared intensity of radiation of the cross-section of the welded seam during solidification with a frequency of 100 to 400Hz. This allows welding speeds of up to 180m/min. As a result, irregularities can be recognised of dimension less than 1mm in the thermal signature. The sensitivity of the TPS allows it to measure a temperature range from approximately 650 to 1,350°C.

For weld inspection purposes, the characteristic of the heat-affected zone (HAZ) depends directly on the weld seam quality. Therefore unacceptable seam irregularities and weld defects will be detected, marked and sorted out.

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Non-destructive testing

CONTRÔLE Mesure Systèmes designs, develops and manufactures for more than 25 years a complete NDT range of products in eddy current and ultrasonic testing methods which comprise high performance instruments and systems, probes and transducers, and accessories.

All the systems meet quality standards such as API, ASTM, and DIN and be used on-line and off-line.

CMS's product line includes: eddy current range: eddy current instruments mono or multi channels branded Zet@; special software, acquisition systems high-speed data with real-time visualisation and accessories; rotating heads RotoETscan, rotating systems, magnetising and demagnetising units; eddy current probes and coils for specific applications and standards designed to meet customer specifications.

Ultrasonic range: ultrasonic instrument UTscan-100 combines high performance with great versatility; immersion tank for pipes inspection; ultrasonic rotating heads RotoUTscan for tube inspection for in-line high speed flaw detection and dimensional measurements of ID/OD/thickness; with its know-how and its experience, Contrôle Mesure Systèmes can provide also from design to manufacturing, complete turn-key machines with associated mechanics; through its products and its remote assistance, Contrôle Mesure Systèmes provides all over the world, quality and productivity solutions for industrial applications.

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Eddy current probe

INNOSPECTION Ltd has introduced a novel approach to the inspection of swaged carbon steel boiler tubes with the development of a specialised rotational Eddy Current probe. The swaged carbon steel boiler tubes are inspected for internal longitudinal cracking. This form of crack occurs on the internal surfaces of the pull-bent sections of the tubes, propagating directly from the adjacent external tube joining seam (vein) welds.

The Innospection probe is collapsible in order to overcome the restricted tube bore entry formed by a tube-sheet swaged joint. The probe eddy current sensors remain collapsed going through the swage. Once inside, the eddy current sensors are rotated by an electrical motor and are forced outwards by the centrifugal force.

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Ultrasonic testing of helical submerged-arc-welded pipes

BORUSAN Mannesmann is the largest pipe producer in Turkey having a production capacity of a million tons of welded pipes and employing more than 1,200 people. A new spiral pipe plant is under construction in Gemlik, Turkey. The main line supplier was Danieli W+K with plants in Italy and Germany. Full production will start in 2012. The Gemlik plant is located directly at the sea, which eases transportation of raw materials and finished pipes by ship. Three ultrasonic testing systems from Karl Deutsch were ordered to fulfil the highest requirements of the oil and gas industries.

The test of the pipe body is performed in the strip stage before welding. The strip widths range from 1,100 to 2,050mm. The testing speed corresponds with the uncoiling process – maximum of 10m/min.

The test specifications in recent years require a high percentage of ultrasonic coverage. In order to avoid any mechanical oscillation, a solution with 100 per cent coverage and a total of 41 probe holders was chosen. Each probe contains a special broadbeam probe with one common transmitter and two receivers (TR-probe with two test channels), thus providing a test track of 50mm per probe. Steel rollers guide the two outmost probe holders along the strip edges. Three additional channels are provided to measure the wall thickness at both strip edges and the strip middle. Thus, a total of 85 test channels is provided. The test results can be viewed online in real-time during the test. Each probe can be monitored either in the strip chart representation (amplitude versus strip length) or in the C-scan representation (top view of strip with colour-coded amplitudes). Since an endless strip is tested, the results scroll through the screen.

The spatial resolution can be chosen by the operator as convenient for the supervision of the test. Special attention was given to a convenient and reliable calibration of the system. All probes can be calibrated automatically and quickly within one step by using a specially prepared test plate which is mounted on a movable table. This calibration unit allows a linear movement of the test plate with respect to the probes with the maximum welding speed up to 10m/min – a difficult task due limited space on the carriage of the uncoiler. For that purpose the testing system is twice as wide as the maximum strip width so that all probes can be moved from the test position (online) to the service and calibration position (offline). The specified test sensitivity for the lamination detection is a 5mm FBH (EN) or 6.4mm FBH (1/4" acc. API). The calibration reflector is a notch over the entire plate width (5mm width in plate transportation direction, depth 50 per cent of the wall thickness). This allows a uniform sensitivity calibration for all probes. The specified sensitivity can be adjusted electronically and automatically.

Each probe uses two receiving elements with a test track of more than 25mm each. A total of 41 probes was used.

The probes are TR-probes (dual-element principle), suitable for the inspection of fairly thin strips and providing small dead zones on top and bottom surface. Three additional probes monitor the wall thickness along the entire strip. The test results are visualised online in strip-chart and C-scan format.

After the strip test, the pipe forming and welding process takes place. In many HSAW-pipe mills the first ultrasonic test is carried out directly after welding on the endless pipe (so-called online test). The new Gemlik plant is designed for a high production rate and operates one high-speed tack welding station and three parallel welding stands.

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Hydrostatic testing bench

PROVEA'S design department has developed a new type of hydrostatic testing equipment, capable of high-pressure test conditions (up to 2,000 bars – 29,000psi). The bench was delivered in early 2012, in a facility dedicated to high quality tubes manufacturing (in particular for nuclear and aeronautic industries). The equipment enables an expansion of the customer's testing facilities for high precision tube.

The work has been realised on the basis of new specifications imposed by the final customer. Indeed, leakage tests capabilities and technologies have to meet end-users requirements. These requirements become more and more severe as the tube industry focuses on higher quality.

The new bench has been realised for a wide tube range (OD 4 to 60mm), but the technology is fully adaptable for other type of tubes. The system can be manual (hydrostatic tests realised separately from other manufacturing processes) or fully automated (leakage tests done in a lean manufacturing process). Multiple heads can also be implemented to ensure limited cycle times in the global production cycle.

One of the key features of this new bench refers to the tube distortion incurred by the high internal pressure. It used to cause difficulties for tube disengagement after the test. The new equipment limits this negative effect. The testing heads clamps and releases the tube much more easily than before. The testing heads are based on three bits hydraulically controlled for tube clamping and testing. Another big challenge has been the level of water pressure imposed on the tube. 2,000 bars imply great stresses in the global system (tube and testing heads) and drastic security measures. The design department found mechanical solutions to take into account these crucial points.

This project has been a great technological challenge for the Provea team. The high pressure test level and the final customer specifications were two factors imposing brand new technological solutions. It states that the fact it took up this challenge reflects its dedication to the tube industry.

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这一栏目专为我们的中文读者介绍国际管道行业的最新技术和行业新闻的综合信息。

板材和型材弯曲机

MG经营的是板材和型材弯曲机。公司有着超过52年的经验，现在是全球业界公认的最著名的公司之一。

目前，公司在板材弯曲机和型材弯曲机之间一个月生产能力达到30多台。公司近期计划扩大工厂以提高产量。

公司的机器系列有500毫米到8米厂以及0.2毫米到260毫米材料厚的板材轧机以及60到530毫米轴的型材弯曲机。

MG提供全液压系统以及独特的创新技术，这是多年的工作经验和不断研发的结果。公司的目标是提供最优的价格同时维持最高的质量。

我们提供众多各式各样的配件，用于材料搬运装/卸系统到最复杂的数控技术，使该机器成为业内最好的。MG为市场提供最可靠的机器，以及提供最好的全球售后服务团队。

在管材展上，公司将展出AR 80 HT型触摸式弯曲机。该机器易于编程而且能生成更复杂的卷材。此外，由于机器功能很多，因此非常适合大型生产。

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McElroy推出导向侧弯试验机

管道熔接设备和配件制造商McElroy推出了导向侧弯试验机。这种质量保证装置用来进行熔接接头延展性定性试验。

导向侧弯试验机是多年来业界使用的“背弯”试验快速安全的替代。有了这台新机器，操作者能够在壁厚1 - 7"的聚乙烯上进行背弯试验。这种试验方法将整个壁厚置于张力中并确保接头的延展性。该试验装置构造紧凑，只需要几个常用工具就能执行这一过程。

“我们的质量保证工具的设计都是便于使用的，”McElroy总裁Chip McElroy说，“这种快速简单的试验配合我们的DataLogger®记录装置可确保是遵守熔接程序的，使用的无损检测以及结果是达到预期效果的。”

该试验仪通过使用刨床切割试样然后将它放到一个液压驱动装置来完成试验。试验装置以控制方式将试样弯曲到将熔接接头拉伸超过材料屈服点。如果在接头处看不到破损或缝隙就表明试样和熔接接头通过了试验。该装置不需要外力，而且试验设备重量不到30磅。

操作者将需要一个锯切机、刨床以及卡钳来使用McElroy导向侧弯试验机进行试验。该试验机可与McElroy的in-field™拉力试验机一起使用，来形成完整的试验工具，用来无损检测熔接接头的关键元素。

McElroy – 美国
网址: www.mcelroy.com

用于冷、热加工的紧凑型直径/宽度测量仪

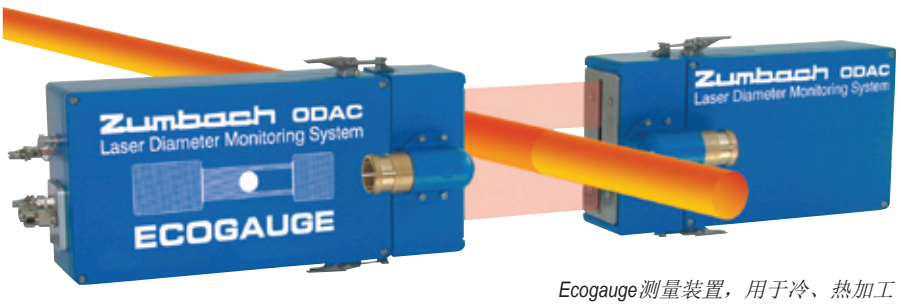
ZUMBACH Electronic公司推出升级的单轴测量仪Ecogauge系统产品线。新型Ecogauge 160和550的应用范围已经扩大到500毫米(20")直径。

Ecogauge系列有各种尺寸，设计用于在冷、热加工的恶劣环境下工作。典型方案是用于棒材或带材轧机工作站之间、输送机里，热挤压之后，径向锻造之后或剥皮以及打磨操作中。安装很灵活，可以水平、垂直或在任何方向上安装。

最新设计的内置ODAC®激光测量仪每秒能进行2000次高精度直径或宽度/高度测量。

发送和接收器模块坚固的外壳以及组合吹扫和冷却系统确保了仪器的保护和冷却。增加的水冷使其可在极端条件下操作，维护也降到最低。

测量数据可以提供给用户定义的输出、Zumbach的USYS以及Steelmaster数据采集、处理和显示系统，包括图像、警报器、统计、数据库和网络。



Ecogauge测量装置，用于冷、热加工

Zumbach Electronic AG – 瑞士
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电子邮件: sales@zumbach.ch
网址: www.zumbach.com

清洁新、旧管道

有了 Compri Tube-Clean 系统，用户可以清洁各种装置（液压、气动、测量、空调）施工和维护工程中的新、旧管道以及清洁新采购的管道，如果清洁不好，可导致机械严重损坏，如泵和阀门，如果是在保修期内还需要自行承担费用采取措施。

该系统可以清除残留物，如烟尘、焊渣、油、冷凝物、生产废料等。

该系统由带各种喷嘴的喷枪构成，能喷射特殊弹丸清洁管道和软管内部。专利材质的弹丸以及结构能清洁直径2到300毫米的管道，以及潜在无限的长度(甚至是5到10千米)。

主要优点是：系统快速、经济；效果比压缩空气、冲洗或刷子刷更好；可用作维护和预防性维护；可在带有弯头（即使是90°）、管件、T型配件、球阀以及变径的管道上使用；能够清除油脂、油，消毒效果极好，同时还节约很多液体产品。

Alka表示如果没有按最高标准执行，如果清洁管道的可靠性降低，可能会带来问题，那么为了得到优质产品将钱投资到最好的技术解决方案、最好的机器以及最好的原料上是可惜的。而清洁过程全部都可以以很少的成本完成，而且只需要几分钟。Bison是管道内部自动清洁系统，非常适合那些每天需要清洁大量管道或需要高速清洁的人。实际上，由于可自动加载弹丸，因此每秒可以清洁一根管道。

也可以由操作者手动喷射，但如果需要，Bison也可以完全集成到一条装配线上或自动生产线上，而且可以完全和谐地开始工作并能自治。

它不需要连接到电源——操作完全利用的是气体。Bison能清洁的管道内径为2到约32毫米。

Bison W/D（湿式和干式）变体提供连续发射几枚弹丸，因此你可以将弹丸发射浸泡到液体产品里，不仅只是干的产品——干的弹丸来清除污物——弹丸浸泡在液体脱脂剂里——干弹丸用来干燥产品残留。然后在新管道上从头开始。

有很多不同类型的弹丸，用途是一对一的。(C)连接：它能处理直径的变化，特别适合带管件的管道，尤其是直径超过50毫米的。(PR)产品修复：它能处理大直径的变化，尤其适合带管件的管子。(GR)打磨：镀铝氧化物，能将绿锈除光亮。(A)研磨：有灵活的小磨头，适合去除滑的污垢或轻微暴露边缘。(S) 标准：非常硬的弹丸，有很强的机械边压强度，适合各种应用。

Alka Srl – 意大利
网址: www.alka-srl.com

用于热轧外径精整的新设备

管道生产市场趋势正偏向越来越小批次的生产，以及偏向成百公吨而不是成千公吨的生产。而对非常高的产品结构却仍保持不变。

Danieli的方针始终奉行最终用户要求的是更智能、更精细、更灵活的解决方案这一原则。研究面向为顾客提供创新装置布置和设备技术，要易于使用但也要降低生产成本和时间。

灵活性是其设计部门的动力之一。但这不是Danieli Centro Tube在项目开发中的唯一目标。

New FRT（四辊技术）设计理念目标是“全面品质”。这一观念是领导项目的严格规则。

全面品质最好的结果只有通过全力关注一流的产品和工艺才能实现。最终产品质量需要借助工厂和装置的整个流程，因此Danieli为顾客提供的每一台设备都特别强调细节和设计。

Danieli是世界知名的完美装置设计供应商。

FRT是Danieli理念最成功的例子之一，而且也说明各部门在实现这一巧妙设计以及没脱离对质量的关注背后有着很好的配合。

设备功能既简单又有效。在过去，压制材料外径精整使用的是两辊和三辊技术，倾向于在辊槽上展开，而使用FRT(四辊技术)，材料的必然趋势是向内陷，因此能减小外径。

一方面，能实现每个站都减径，另一方面，站之间的伸展更高。

产生的壁厚变化以及减径是可预测的，因此易于控制。整个轴上壁厚的均匀分布提高了绿色管道壁厚公差。两辊和三辊技术的内部多边化需要椭圆孔型设计而且能耗非常高。

功率实际上是被自然缩减能量和椭圆化能量所吸收的。

四辊技术(FRT)过程需要很少的椭圆化能量，因为孔型设计主要集中在形成一个完美的圆上。而变形能量被用来提供更高的变形效率。

由于新的孔型设计使外径公差减小，因此几乎在第一站就达到了最终效果。

一致的圆周速度以及因此而减小的侧面和底面凹口之间的速度差意味着轧辊磨损大大较低。

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高精度激光切割

来自Yamazaki Mazak Optonics 的MAZAK 3D Fabri Gear是一台用于大型管材和型材加工的三维激光切割机。一次机器设置能够连续切割各种形状材料，使用通用的焦点切割器（7.5" 到5"）以实现每个点的倾斜角度都正确。这确保不同形状切割部件之间完美配合，并为焊接准备开出合适的坡口。这一技术特征可以为木工建设高效加工结构部件。

该机器配备有4个夹盘用于加工长的成品部件，自动紧凑的定心夹使废料最少化，而且两边都能纵向移动。自动装/卸系统能处理最大长度15米的管材和型材，最大直径323毫米的管材以及最大截面250 x250毫米的型材。

数控控制管道形状，使用测量系统检测工件形状的缺陷。由于有一个特殊的装置位于切割炬旁边，因而能在一个方便的位置对焊缝检测定位。

Fabri Gear三维激光切割机

Yamazaki Mazak Optonics是日本Yamazaki Mazak Corporation集团的激光分公司。Yamazaki Mazak有八家生产工厂，50个科技中心以及45个技术中心。

2008年公司开动了Phoenix Laboratory——一个有着10000多平方米生产区域以及20米地下通道的独特的未来派工厂，用于先进激光技术的建设。

新的Mazak World Parts Center中心，与全球分销中心联系，为全球提供备件。

所有生产工厂都有研发中心，用来开发最适合客户需求的解决方案。

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反应堆重要的远程焊接

在核电站，安全是最重要的，操作者需要指定最好的自动防故障装置修复系统，以确保风险最低。

EDF Energy在其英国核舰队的综合安全系统的主要部分是Arc Machines Inc (AMI) 公司提供的高质量焊接系统，保证安全检修损坏的再热器管。

经过3年从概念到设计以及应用测试的发展过程后，AMI提供了一个全定制、全远程部署的Model 20焊头，用来封堵EDF Energy的高级气冷反应堆再热器上所有有泄漏的管子。

新的焊头以及一个M415电源完善了系统，将用于反应堆停机期间封堵损坏的管子来阻止进/出口管子泄漏。

焊接系统定制改变包括远程驱动特制堵头堵住焊缝区并在应用两通道焊接顺序外加填充焊丝期间稳住堵头的装置。该焊头包括一个高精度视觉系统可以快速定位管道、监控焊接进度并能够进行焊后目视检查，以及使用一个高清相机来确定焊缝是否合格。

在反应堆停机时间确保已损坏管子安全的封焊方法对EDF Energy的安全情况是至关重要的。对于焊缝完整性如此重要以及在反应堆结构内进入管子具有难度的情况下，自动系统是唯一的解决方案，而且AMI严格的生产标准、精湛的技术以及材料质量是其成为可靠解决方案的首选。

M20焊接系统是AMI与EDF Energy长期合作下的最新活动，该系统同时提供标准和定制焊头以及电源。改进的内径焊接头带直径48毫米的堵头，根据管子的长度和位置距管子入口点8到12米，使用AMI的远程焊接视频监控系统完成精确定位和密封操作。

专利的视觉系统包括直视光学系统和彩色摄像机，能同时显示熔池首尾两端。

微型摄像机组合结合远程控制双线机械手可以双向同时焊接，并提供清晰的焊接过程画面以及焊接完成时运行焊缝和管子完整性无损检测(NDE)的设施。

EDF Energy在Heysham 1和Hartlepool反应堆使用了改进后的AMI焊接系统，并且非常乐意为工程承包商Doosan Babcock指定另外的AMI设备。

预期工作寿命为20年的M20焊接系统将安装到 Hinkley Point B、Torness、 Heysham 2 以及Hunterston B的AGR反应堆，用来替代大约30年前反应堆第一次试运行起使用的焊接系统。

EDF Energy的区域锅炉方案经理Andy Purvis强调公司把安全放在第一位的：“再热器管子修补是很少发生的，但是EDF Energy有责任安全地维护这些工作站。每个再热器大约有250根不锈钢管，如果其中一根损坏，整个反应堆都要停机。AMI 系统为我们提供了安全、有用的焊接系统，使我们能够很快的回到原来的地方，这对我们的商业经营是很重要的，而且它能够看出其他工作站的操作寿命。”

AMI全面试运行了焊接系统，提供了操作和安全培训，并在达文特里新工作场所维持全面支持和用户支持服务。

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打磨、抛光和去毛刺机

LOESER是高质量表面处理技术领导者，与主要的砂带制造商有密切的合作。从简单的一站式机器到全自动的多站系统，Loeser根据客户的具体需求定制工程师系统。

新的Loeser压力控制打磨技术能进行重度打磨、精密打磨以及精加工。砂带损坏时能快速更换，与石头打磨或车削相比能提供重要的时间优势。

Loeser机器可配备不同组合的多工作站，全封闭或全开式的。系统是全模块化的，而且能增加工作站来更新以适应未来需要。对于不锈钢管的镜面抛光，Loeser生产一种由湿式预磨模块和使用抛光剂的无心棉轮抛光组成的组合机。

对于机器重度的打磨应用，Loeser提供高速砂带打磨，而不是车削，机器型号为RPS376和RPS377。

公司的无心研磨和精密磨削RPS+SF型机器适用于活塞、棒材和轴打磨，使用高频打磨实现0.004µm Ra以内的超光洁表面。

对于高质量铬退镀以及凹印汽缸打磨，Loeser提供HSD+SF型机器。

Loeser的产品线最近已扩展到包括完整的连续贯穿进给镀铬系统。

这个新成员连同连续贯穿进给感应淬火系统意味着Loeser能够为贯穿进给硬化、贯穿进给砂带打磨预镀铬、贯穿进给连续镀铬、贯穿进给抛光后铬；以及用于增加防腐的特种蜡贯穿进给应用提供解决方案。

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新型M11-E-6管端成型系统

Manchester Tool & Die, Inc有限公司现提供新型Model M11-E-6管端成型系统。因Model M11-E-6的“绿色环保”可节约几方面成本，包括能源、设置、生产和维护成本的节约。

M11-E-6管端成型系统提供低噪音，平均节能83%，有很多管端形式可供编程，因此设置节约67%。生产能力平均增加15%到27%，每班能生产超过480多个部件。因不再用液压油以及无需夹具触发链和销使长期维护节省也得以实现。Manchester Tool & Die为各种行业提供管端成型设备和工具，机器处理能处理$^{3}/_{16}$"到3"外径的管道。机器和部件可根据特殊应用制造。Manchester Tool & Die也提供钢铁制作和生产机器服务。

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模拟模块便于弯曲机修改

随着4.7版新软件的发布，AICON的光学测量系统TubeInspect将增加一个实用功能：现在，操作者能够模拟兼顾每个修改值的弯曲过程，并通过虚拟检测仪检查确定其对精确度的影响。在高分辨率数码相机的帮助下，TubeInspect在几秒内可确定管道几何尺寸，从而证明检测仪的精确度。该系统可以详细显示的与所需值有偏差弯曲点，并提出修改数据。这些修改数据可以直接传送到弯曲机——TubeInspect可连接到100台以内弯曲机。有时，TubeInspect提出的修改数据不能一对一传输，比如，如果他们导致在弯曲机上冲突或者如果在部件上提出的修改因固定的弯曲工具而不受影响等。这就是新的仿真模块发挥作用之处：当TubeInspect确定测量后的管道有不好部分并提出修改值时，操作者就能够用自己的判断来改变他们——毕竟只有他才清楚弯曲机的实际情况和特点。这样做，操作者不会承担任何风险，因为TubeInspect可以模拟修改结果并用虚拟检测仪检查弯曲过程是否真正能生产出一个好的部分。当发现正确设置时，将进行另外一次真正的弯曲试验。因此，将来需要的弯曲试验将更来，使设定程序甚至更简单。

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操作者已决定在8号弯曲点放弃修改。但，虚拟检测仪检测结果兼顾这些规格显示是不好的部分。因此，操作者必须继续工作在这些修改数据上

在18号弯曲点，弯曲角度修改数据已归零。虚拟检测仪确认修改成功并生产出好的部分

API管子矫直机

Bronx Taylor-Wilson 和Abbey International设备供应商 Fives Bronx为各种尺寸和钢种设计定制机器。Fives Bronx系列矫直机很灵活，能加工各种API等级的管道以及特殊合金管道市场。这种六辊矫直机在全球主要的无缝和电阻焊管生产厂都有使用。

Fives Bronx重型管道矫直机的设计能满足在艰苦的工厂条件下矫直API和GOST品质的管道。目前未完成的Fives Bronx矫直机订单包括来自美国俄亥俄州一家主要的钢铁生产商。6CR9 HD将加工API套管、油管、加厚管、线管以及机械管道，外径为2⅜"到7⅝"，屈服强度在140,000磅以上，温度750华氏度到1,550华氏度。对于沙特阿拉伯朱拜勒的Arcelor Mittal，三大系列6CR11机器将用来加工最大直径114.3 到406.4毫米的管道，屈服强度在965兆帕以上。

Fives Bronx 6CR9

公司还拿到一份6CR9系列机器的合同，为Baotou Steel International加工套管和线管，热处理车间矫直直径168.3毫米以内壁厚25毫米高屈服强度API管道。该机器将在650°C以上的温度情况下在线操作。

在美国，Bronx为俄亥俄州扬斯敦的钢管生产世界领导者设计了一整套精加工解决方案。该生产线包含三大Bronx系列6CR9矫直机、140 MPA管道试验机以及一组高速管端坡口机。

在这些设施内的产品的组合是受到越来越深的井需要比以前壁厚更厚以及屈服强度更大的管道这一事实所驱使的。为了使机器能加工直径、加厚部分、壁厚以及屈服强度范围更广的管道，Fives Bronx机器不得不采用最高设计荷载。

6CR型API矫直机由六个成三对安装的凹面辊组成，轧辊垂直放置，底部有支撑，顶部由坚固的钢柱拼装到一起。顶部和底部轧辊可由单独的齿轮电机或大齿轮箱以及通用驱动轴驱动，使每个轧辊可以进行角度和垂直调整。

单独驱动方案可以一次只更换一个工作辊，还能与剩下的五个辊速度匹配，而不是更换一整套同一直径的轧辊。轧辊能快速方便地进行角度调整，使管道和轧辊之间能进行超过辊型最大有效长度的线接触。这可以支持尽可能长的超过其长度的管道，而且能矫直甚至壁厚很薄的管道，且不损伤管道。

为加工端部加厚的管道，6CR机器设计有自动打开每个矫直通道的功能，使更大直径的加厚端部能自由地通过机器。而且该机器还设计有加厚端部通过后立即自动关闭到管体上，使机器能够矫直全长管体。

其他设计特点包括并入了加厚部分移动到机器顶部通道的功能，以及不再需要进入机器底座液压缸进行维护，这里常常充斥着锈迹和水。还并入了一个快开液压减压回路作为一种安全措施来保护轧辊和轴承。

专利的Fives Bronx COMPASS计算机辅助设置系统利用最新的工业电气和电子技术提供一致的高质量产品以及生产能力。有了COMPASS系统，该机器变换尺寸的设置时间减少到不到三分钟，而且其数据收集和储存对于生产商和最终用户加工敏感型重要零部件来说是至关重要的。

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Cartacci 的订单

CARTACCI Ltd有限公司获得了一系列生产线订单，包括矫直机、拉丝机、切割机以及包装设备。Cartacci的合并经验使其能对越来越尖端的设备做出改进，确保能在很短的安装时间内达到效果。

在正在生产的新型10辊矫直机中，Cartacci正在制造一台运往巴西市场的矫直机：尽管必须在最大直径为215毫米的管道上工作，它还是被设计成了一种新的常规的几何形状，尤其是低的轴距和大的辊面。

这提供了矫直质量方面的优势，尤其是在管端上。垂直和角度位置的测量系统已换上了更可靠、更精确的新装置。这些改进也反映在第二台矫直机上，这台将运往美国市场，用于最大直径178毫米的石油管材。Cartacci已经为这种类型的矫直机设计了不同的版本。

Cartacci在设计用来满足所有API标准，包括从5D(用于钻杆) 到5CT(用于管和套管)，的矫直机构造方面有广泛的知识。尤其是对于API 5CT管道，公司生产了能加工含有13%铬(L80)和28%铬(P110)材质，以及能加工冷拔和热拔管(800°C以内)、平端管以及加厚或整体联接管道的矫直机。

弯曲和压平的共同作用，分别执行，使矫直机实现了(0.2mm/m)直线度以及(±0.05mm)椭圆度。每种机器在设置研究和各自的定位上都使用的是计算机。

为了进一步响应顾客的需求，Cartacci制造了三台新的棒材矫直机：一台用于最大直径28毫米铝制棒材的矫直，另外两台用于最大直径35毫米石油设施高合金钢棒材的矫直。两种型号都采用的是Cartacci MMS自动设置系统。棒材特性参数的引入使得机器能计算出准确的矫直设置。

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带装载系统的自动、高速短管矫直机

台湾CISFUN Technology Corp公司宣布生产了带有装卸系统的新型全自动、高速短管矫直机，能矫直外径20毫米到70毫米的管道。它是建立在稳定、紧凑设计旋转压力和交叉轧辊矫直原理基础之上的，直线度高达0.1/500毫米，厚度公差在0.1毫米内。

合适的长度为150到500毫米，操作是自动PLC控制/轧辊设置（可选）；范围：0.5毫米到25毫米厚；单/双/变速矫直速度达到12秒/件；不需要换轧辊，而且轧辊易于调整使管道和轧辊之间完美接触，超过了最大有效辊型。

它还包括不同管道尺寸简单的机器设置，用户只需要松开一颗六角螺母即可。所有轧辊由两个相同的电动机和液压发动机驱动。

该机器有单速/双速/变速选择。轧辊由SKD 11合金制造而成，经过硬化、双面打磨和研磨。我们的机器由台湾生产的部件/零件组成。CisFun表示不会使用任何劣质材料零部件，因为这样会使机器的质量和可靠性打折。机器组装是由台湾的专业工程师完成的。这确保机器最终价格非常有竞争力。公司还表示主要的是公司可以自豪的确保机器是按高质量、精度和可靠性标准生产的。

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管道矫直技术

RAVNI Technologies公司生产自动管道矫直（和切割）机，用于外径2毫米到45毫米钢管、不锈钢管、铜管、以及盘卷涂层管矫直。

公司以这方面的技能而著称，而且根据客户要求，两台主要的矫直装置被安装在机器上。

旋转矫直机配有专用工具，以防止损坏管道。它专门用于实现非常精密的直线度（±0.1mm/m）。该装置对比如用于航空工业的薄壁（0.1毫米）因科镍合金管也很有效。

该技术可以与飞锯和无屑切割连接。作为替代方案，可在切割时停止旋转。

第二个方法是拥有各种选择的更经典的轧辊矫直机：从5+5水平和垂直轧辊到11+11+11三种方案。Ravni专为每个直径开发了机械记忆功能，这样当需要更换管道时你可以立刻找到设置。它还可以装配数字显示器。

机动矫直机也在范围内，而且常常是按照客户的需求设计的。Ravni Technologies为全球提供机器安装、培训和启动。

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大功率锯切机

奥地利Maschinenfabrik Liezen und Gießerei GmbH (MFL)公司向全球管道生产商提供定制锯切和磨削设备。

公司的冷圆盘锯床用于切割不锈钢、高低合金钢、结构钢以及非金属坯料、管材、型材以及板材。

该机器配备有硬质合金镶齿锯片，以低成本确保高的性能以及长的使用寿命。

这些锯切机分为单切锯床以及层切锯床。单切锯床能够切割坯料以及直径30到800毫米的单管。层切锯床用于切割无缝管、I型和U型梁、板材和角钢。

这些锯床适用于重型应用，并有22到200千瓦主驱动功率，以及一个伺服电机控制的馈送驱动。

Step 7编程锯床使用个人电脑或操作面板通过可视化操作者界面操作。

MFL能够根据客户的要求提供独立的机器以及带进出设备的完整锯切生产线。

在10多年的经验里，MFL成为了锯切和磨削技术有能力有经验的合作者，并提供技术知识以及最先进的科技。

MFL将在2012年杜塞尔多夫管材展上展出最新的技术和进展。

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MFL层锯切机HK 2200 L160

The development of AUTO-DNSA mills and ERW tube mills

By Guowu Gao, chief engineer, FD Machinery, China

THE fact that the global economy is in a downturn makes investors for ERW tube mills more cautious. Only a company with sound economic strength and a stable market would consider making an investment to either build new lines or renovate the equipment, while there will be less speculative investment.

Those companies have used many types of equipment that are new, old, advanced or obsolete, which enables them to accumulate useful experience in judging the quality of the equipment to help them select their favourite equipment for the future. Although the experience is useful in making a judgment it is not always enough because the technologies have been advancing continuously and people's understanding usually lags behind the technological development. Buyers hope to purchase cost-effective equipment with good performance and may also hope to make a useful investment while others stop investing to create an opportunity to beat competitors.

However, the understanding of equipment does differ due to the different background, experience, area of the world and interest. Some companies would choose the equipment that can simply get the tube produced. Some would tend to favour equipment they have used in the past. Some with low labour cost and poor technology prefer simple equipment. Tube mill manufacturers, of course, often like their own equipment. Therefore, this paper will make an objective judgment on the equipment from a purely technological point of view, which will be helpful for the buyers to better understand the equipment and choose the equipment that best suits their needs.

DNSA mill: Horizontal stand and vertical roll stand

The buyers of any equipment will face the issue of employees. For a production line, the technical capacity of the employees has a direct impact on the returns of an enterprise. You can often be taken by surprise by some enterprises that have built large plant buildings and installed many production lines. Only one size product is produced by each line, so this line is operated if the order is placed for this product, while other lines stop without any roller change or testing.

This approach is not suitable for most tube welding plants, because not only has the profit been eaten by the plant area, but you can also never have enough production lines to match the number of products of different specifications.

However, there must be some reason for such an enterprise to exist. If we ponder the reasons, we would find it is because the

owners of the enterprise are trying to make the roll change and the adjustment unnecessary. Of course, this can only be a dream as roll change and adjustment is a must if the tube mill is to produce tubes of different specifications. The point is, can we get the same result with automatic roll change and automatic adjustment? The answer is yes. AUTO-DNSA mill is just such a unit with such capacity. To understand its functions, we will need to start with the DNSA mill.

DNSA was developed and launched to the market by FD Machinery in 2009. DNSA stands for Digital Non-strip Set Adjust, which means all rolls are located digitally and the unit is set and adjusted under the non-strip status. In other words, the operation no longer relies on experience, and the commissioning will not have any scrap. So far two DNSA production lines are in operation and several others are being manufactured by FD Machinery.

It can be seen from the photos below that the locations of all the rolls of DNSA mill have been fixed precisely and displayed digitally. Those figures are not selected by the operation freely. Instead, they are determined by the mill adjustment cards. What the operator needs to do is only to adjust the rolls as per the data on the cards to have the finished products manufactured.

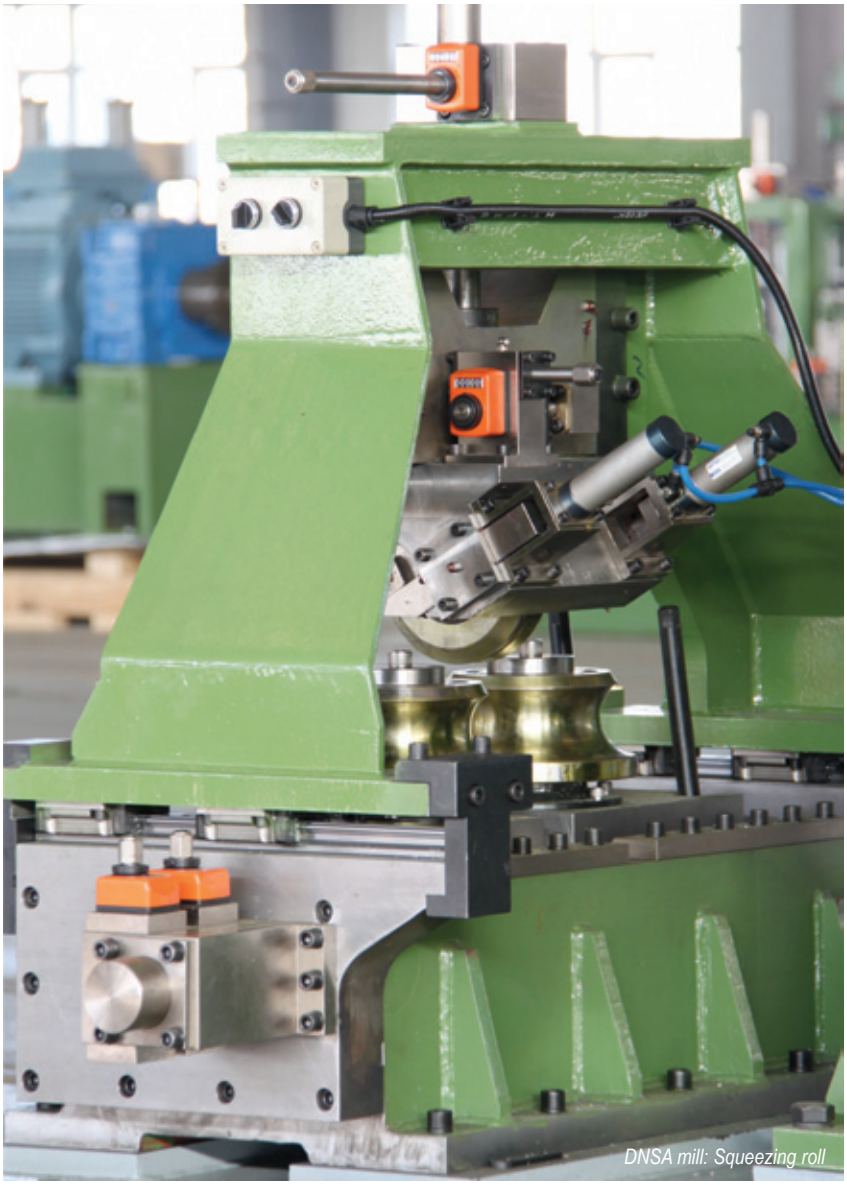
It can also be found from those photos that all rolls have rapid roll change function so that one worker can easily replace all the rolls in one hour without removing even one bolt. For the needs of digitalisation, the requirements on the manufacturing precision and equipment rigidity by DNSA mills are higher than the normal mill in addition to the special design for some structures. FD Machinery spent a whole year to complete the design and manufacture for the first DNSA mill, and has recieved many invention patents for the mill.

As mentioned above, easy roll change in short time, roll change and adjustment in DNSA mill are all important performance factors of the mill. The features of various roll change types have been summarised as follows to facilitate a clear understanding of roll change.

People have been studying rapid roll change for a long time. For the horizontal roll, there are generally five types of rapid roll change mills, which are respectively side roll change, top roll change, side shaft change, base plate change, and base change.

For rapid roll change mills with side roll change, since drive shafts do not need to be removed, no standby equipment or spare parts need to be added, and no secondary roll change is needed. These kind of rapid roll change mills are extensively used in the mills of small and medium size. To change roll for the rapid roll change mills with side roll change, the mill housing at the operation side shall be pulled open, then the sleeves and rolls shall be pulled out from the side. The process for roll loading shall be in the opposite order. The simple side roll change unit is a drawing machine driven manually, electrically or hydraulically, which is used to pull and push the mill housing. The pulled out mill housing will be lifted by the crane before the rolls are changed. The vehicular side roll change unit is equipped with a roll change cart with the drawing machine installed on top. The cart is installed on the base of the mill via the straight guide rail. The mill housing is pulled to the roll change cart by the drawing machine and the cart carrying the mill housing is pushed away manually prior to roll change. This is a convenient and practical roll change unit. Both DNSA mill and AUTO-DNSA mill are of the side roll change type.

Rapid roll change mills with top roll change or side shaft change are common in the early designs. To achieve rapid roll change, the stand of those two kinds of mills should have one or several sets of standby shaft units. The rolls shall be installed on the shaft in advance. When rolls change, one standby shaft unit will be installed to replace the one set in the mill. The removed shaft unit will be changed roll in offline. For both top roll change and side shaft change, the horizontal roll shaft and the drive shaft must



DNSA mill: Squeezing roll

DNSA mill: Turks head

be separate. This is troublesome although this operation can be simplified via some special designs. Moreover, to have a smooth shaft change, the clearance between the slide block and the stand must be increased, which affects the system precision and rigidity. These two roll change types are used mainly for the design of large mills, for the rolls of large mills are heavier and the shafts are longer, so the shaft change may be easier than roll change.

Base plate change is also a common rapid roll change unit. There are at least one set of standby base plate containing all stands to achieve rapid roll change. To lessen deformation, usually two to three horizontal roll stands and several vertical roll stands are installed on one base plate. The stand is installed with rolls beforehand. When rolls are changed, the stand and the base plate will be replaced together. The replaced stand shall have a secondary roll change. OTO Mill and FD Machinery are manufacturers of two different base plate change mills. The drive shaft of OTO Mill is installed on the base plate and FD Machinery has three mill housings for each horizontal stand. The one near the drive side separates and connects the horizontal shaft and the drive shaft automatically via movement forward and backward, which is not changed together with the base plate.

There are few rapid roll change mills with base change available, which has at least one set of standby base installed with all stands. Usually there are two bases, namely, the forming base and the sizing base.

The rolls are installed in the stands in advance. To change rolls, both the base and the stands are replaced, and the drive shaft connects automatically. In terms of online roll change, this kind of mill is also counted as the automatic roll change. But the removed stands need to have secondary roll change. This kind of equipment was made by Abbey Etna.

The mill without roll change is also what people have been pursuing for many years. Mills without roll change for round tubes are limited in break down section. Many rolls outside this area need to be changed. Small and medium-sized tube welded mills have higher precision, better quality products, wider size ranges, more specifications with low equipment and maintenance costs.

Vehicular side roll change unit of DNSA mill

DNSA mill: Guide roll and impeder

Although there are a large number of rolls, they are of low purchasing and maintenance costs due to a lighter weight of rolls, so the roll cost distributed into the cost is low.

The square/rectangular tube mills can be made without roll change. There are many more product specifications of square/rectangular tubes (including the section area, length, wall thickness) than those of the round tubes, the specifications are more frequently changed, which takes more time. Then, the performance advantage for no roll change is quite remarkable. Olimpia 80 Tube Mills Machinery and FD Machinery are manufacturing this kind of no roll change square and rectangular tube mills.

Rapid roll change mill with base plate change by FD Machinery

The AUTO-DNSA mill was developed by FD Machinery in 2011 on the basis of DNSA technology. AUTO-DNSA refers to the DNSA mill with automatic roll change and automatic adjustment. FD has signed the first supply contract with a Taiwan large steel tube company and the mill will be put into operation in June 2012.

CFS mill of Ø200×200 Ø500×500mm by FD Machinery

The basics of the AUTO-DNSA mill are from DNSA, which is an upgrade on the manual automation of the DNSA mill. Like the DNSA mill, the AUTO-DNSA mill has higher requirements on the equipment precision and rigidity compared with normal mills. The differences are that in DNSA mills, the tables are used to adjust the rolls manually and the roll changes are done mechanically. For the AUTO-DNSA mill, the automatic roll change is done via programs for automatic adjustment. The roll change (including adjustment) takes less than an hour. When the equipment is running, the operator can adjust the equipment any time without any need of switch. The characteristics of the digitalisation, automation and humanisation of AUTO-DNSA mill seem to make us see future tube welding plants, where people in white shirts sit in the control rooms at constant temperature far away from the noise, sending out various production commands to each production line. Only the suppliers are on the field to unload the steel coils continuously to the specified locations, and the buyers are busy picking up their steel tubes. One or two operators are responsible for changing the blades, saw bits, induction coils and impeders or deal with some minor troubles for all the mills. It does not cost much to have all this achieved. The AUTO-DNSA mill will become the perfect ERW mill in the world, if it can be turned to a reality.

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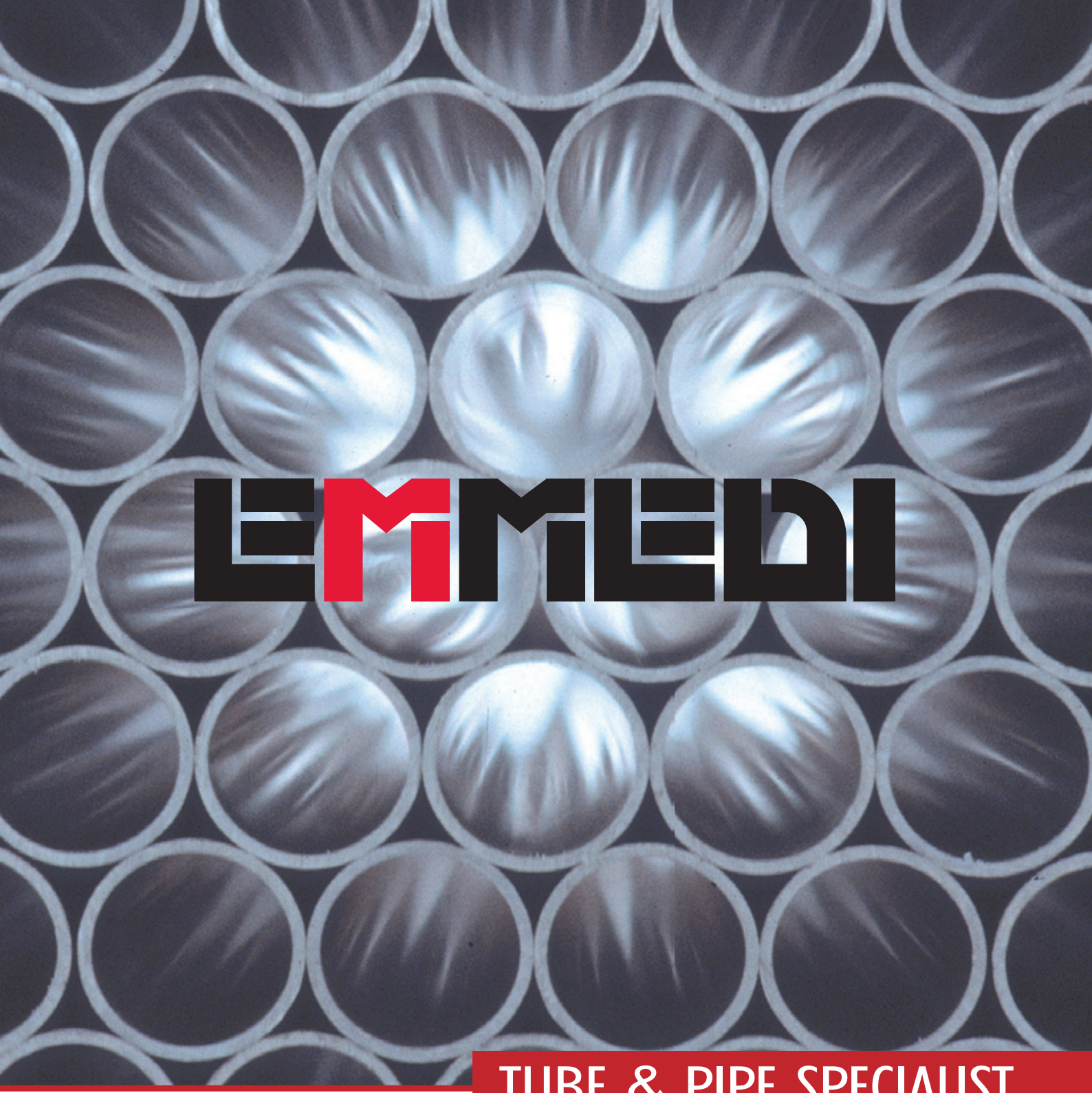

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